



CENTRAL VALLEY REGIONAL
WATER QUALITY CONTROL BOARD

**Natural Streams and Aquatic Life Within the
Central Valley Pesticide Basin Plan Amendment
Project Area**

Draft Staff Report

July 2007



CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY



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**REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION**

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Table of Contents:

Executive Summary:.....	i
Glossary/Key	ii
I. Introduction.....	1
II. Identification of Named Natural Streams Within the Project Area.....	1
1. Description of the Central Valley Pesticide Basin Plan Amendment Project Area	1
2. Identification of Natural Streams	2
III. Aquatic Life in the Central Valley Pesticide Basin Plan Amendment Project Area	4
1. Description of Aquatic Life Beneficial Uses.....	4
2. Biological Community Data Literature Search.....	4
3. Fish and Macroinvertebrate Site-Specific Data	5
A. Synopses of Macroinvertebrate Site-Specific Data Reports.....	5
B. Synopses of Fish Site-Specific Data Reports.....	8
4. Central Valley Steelhead and Central Valley Spring-Run Chinook Salmon Critical Habitat Data	8
A. Background and Description of NMFS Data	9
IV. Discussion and Conclusions	9
V. References:.....	11

Figures:

Figure 1 – Central Valley Pesticide Basin Plan Amendment Project Area (Project Area) Nested Within the Regional Water Quality Control Board – Central Valley Region Boundaries	14
Figure 2 – Project Area Subareas Within the Central Valley Pesticide Basin Plan Amendment Project Area – Lower Sacramento River Watershed (Sacramento Subarea), Lower Delta Watershed (Delta Subarea), and Lower San Joaquin River Watershed (San Joaquin Subarea)	15
Figure 3 – Lower Sacramento River Watershed (Sacramento Subarea) Named Water Bodies Within the Central Valley Pesticide Basin Plan Amendment Project Area	16
Figure 4 – Lower Delta Watershed (Delta Subarea) Named Water Bodies Within the Central Valley Pesticide Basin Plan Amendment Project Area	17
Figure 5 – Lower San Joaquin River Watershed (San Joaquin Subarea) Water Bodies Within the Central Valley Pesticide Basin Plan Amendment Project Area.....	18
Figure 6 – Macroinvertebrate and Fish Site-Specific Sampling Locations Within the Central Valley Pesticide Basin Plan Amendment Project Area	19
Figure 7 – Central Valley Spring-Run Chinook Salmon Critical Habitat Within the Central Valley Pesticide Basin Plan Amendment Project Area (Gavette, 2005b; NOAA 2005a)	20
Figure 8 – Central Valley Steelhead Critical Habitat Within the Central Valley Pesticide Basin Plan Amendment Project Area (Gavette, 2005a; NOAA, 2005a).....	21

Tables:

Table 1 – Named Water Bodies Within the Central Valley Pesticide Basin Plan Amendment Project Area	22
Table 2 – Site-Specific Data Point Locations Within the Central Valley Pesticide Basin Plan Amendment Project Area.....	54
Table 3 – Sacramento-San Joaquin Delta Total Maximum Daily Load Water Bodies.....	64
Table 4 – Summary of Site-Specific Studies Containing Aquatic Life Data Within the Central Valley Pesticide Basin Plan Amendment Project Area	67

EXECUTIVE SUMMARY:

This report outlines a process for identifying natural streams in the Central Valley Pesticide Basin Plan Amendment Project Area (Project Area), which includes the Sacramento and San Joaquin River watersheds below the major reservoirs in California's Central Valley. Natural streams are streams that have the potential to support aquatic communities and provide habitat. The objectives of this report are to 1) compile a list of natural streams using the outlined process and, 2) confirm the presence of aquatic life uses in a subset of those streams using available literature and field study data. The list of natural streams will be used in the Central Valley Pesticide Basin Plan Amendment and future Total Maximum Daily Loads (TMDLs). Aquatic life uses include freshwater uses and habitats that support aquatic ecosystems and communities (fish, invertebrates, wildlife). Reviews of pesticide data in previous Basin Plan Amendments indicated that aquatic life uses are generally the most sensitive existing beneficial uses to pesticides.

Over 750 natural streams were identified in the Project Area in addition to the 146 streams with aquatic life uses within the Sacramento-San Joaquin Delta as outlined in the Sacramento-San Joaquin Delta TMDL and Basin Plan Amendment. A review of available biological field studies data indicated the presence of aquatic habitat and communities (aquatic life uses) at all sites/streams where assessments were conducted. The National Oceanic and Atmospheric Administration's (NOAA) critical habitat designations for Central Valley steelhead and spring-run Chinook salmon were also reviewed. The geographic boundaries of the NOAA critical habitat designations overlapped with the Project Area and included many of the natural streams identified for the Project Area. The NOAA critical habitat designations were used to further support the existence of aquatic life uses in the natural streams identified in the BPA Project area.

GLOSSARY/KEY

Basin Plan	The Water Quality Control Plan for the California Regional Water Quality Control Board, Central Valley Region – The Sacramento River Basin and the San Joaquin River Basin, Fourth Edition, revised August 2006
Benthic Macroinvertebrate	“...animals inhabiting the substratum [bottom] of lakes, streams, estuaries, and marine waters” (Eaton <i>et al.</i> , 2001)
Benthos	Bottom substrate of water body
BMI	Benthic Macroinvertebrate
Chinook	Central Valley spring-run Chinook salmon
Delta Subarea	Lower Delta Watershed (Figure 4)
Delta TMDL	Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos Total Maximum Daily Load and Basin Plan Amendment (McClure <i>et al.</i> , 2006)
DFG	Department of Fish and Game
DPR	Department of Pesticide Regulation
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
GIS	Geographic Information System
NMFS	National Marine Fisheries Service, a branch of the National Oceanic and Atmospheric Administration
NOAA	National Oceanic and Atmospheric Administration
Project Area	Central Valley Pesticide Basin Plan Amendment Project Area
Regional Water Board	California Regional Water Quality Control Board, Central Valley Region
RF3	Reach File 3, a GIS file from the USEPA
Sacramento Subarea	Lower Sacramento River Watershed (Figure 3)
San Joaquin Subarea	Lower San Joaquin River Watershed (Figure 5)
Steelhead	Central Valley steelhead
TMDL	Total Maximum Daily Load
USEPA	United States Environmental Protection Agency
UC Davis	University of California, Davis
UM	University of Maryland
USGS	United States Geological Survey

I. INTRODUCTION

The purpose of this report is to identify natural streams² that support aquatic life located within the Central Valley Pesticide Basin Plan Amendment Project Area (Project Area) (Figure 1). The Regional Water Quality Control Board – Central Valley Region (Regional Water Board) will use this report to support the development and implementation of water quality objectives and Total Maximum Daily Loads (TMDLs). Natural streams, which include modified streams, can support habitat for aquatic ecosystems and communities. The natural streams that Regional Water Board staff identified in this report will be evaluated for inclusion in one or more TMDLs. The named natural streams may be incorporated into the Regional Water Board's Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan) to be used to guide future application of water quality objectives related to multiple pesticides in the Project Area. Using a multi-stream and multi-pesticide approach will enable the Regional Water Board to more efficiently and cost effectively develop and implement water quality objectives and TMDLs.

Staff generated a list of natural streams using Geographic Information Systems (GIS) that was reviewed and described by geographic subareas within the Project Area. Next, possible aquatic life beneficial use designations that were applicable to natural streams within the Project Area were defined. The presence of aquatic life uses was confirmed by review of available biological field studies and National Oceanic and Atmospheric Administration (NOAA) critical habitat designations for two Central Valley native fish species. In addition, the water bodies named in the Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos TMDL and Basin Plan Amendment were listed (McClure *et al.*, 2006). Lastly, a discussion followed that summarized the data supporting the existence of aquatic life uses of the natural streams identified within the Project Area.

II. IDENTIFICATION OF NAMED NATURAL STREAMS WITHIN THE PROJECT AREA

1. Description of the Central Valley Pesticide Basin Plan Amendment Project Area

The geographic area of the Central Valley Pesticide Basin Plan Amendment Project Area (Project Area) encompasses a portion of the Central Valley; the Project Area is entirely situated within the Central Valley Regional Water Board's boundaries (Figure 1). Regional Water Board staff defined the Project Area boundaries using a Geographic Information System (GIS) and the boundaries were primarily defined using major Calwater 2.2 hydrological units (CIWMC, 2004), and as including water bodies downstream of major reservoirs. The entire Project Area was divided into three subsections, the Lower Sacramento River Watershed (Sacramento subarea), the Lower Delta Watershed (Delta subarea), and the Lower San Joaquin River Watershed (San Joaquin subarea) (Figure 2). The subareas can be described roughly as follows:

² Please note that the terms "natural streams", "streams", and "water bodies" will be used synonymously throughout the report.

The Lower Sacramento River Watershed, containing the Sacramento and Feather Rivers, was defined as including water bodies downstream of major reservoirs or Region 5 boundaries. The Sacramento River and its tributaries feed into the Sacramento-San Joaquin Delta at the southern border of the Delta subarea.

The Lower San Joaquin River Watershed containing the lower San Joaquin River was defined as including water bodies downstream of major reservoirs and Region 5 boundaries. The San Joaquin River and its tributaries feed into the Sacramento-San Joaquin Delta at the southern border of the Delta subarea.

The Lower Delta Watershed contains the legal Sacramento-San Joaquin Delta and water bodies that drain into the legal delta, excluding the Sacramento or San Joaquin subareas. Water bodies that are included in the Delta subarea are downstream of major reservoirs and Region 5 boundaries.

2. Identification of Natural Streams

Staff reviewed existing, readily available information, data, and reports in order to identify by name “natural” streams within the Project Area. For our purposes, water bodies that had “creek”, “river”, or “slough” as part of their names were presumed to be “natural” streams, although we recognize that most of the original water body channels in the Project Area have been modified to a greater or lesser degree for urban or agricultural water supply and discharge/drainage purposes. Water bodies that we did not include on this list generally contained “canal”, “drain”, “lateral”, “ditch”, or “aqueduct” as part of their names. The exceptions to this were water bodies mentioned in the Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos Total Maximum Daily Load and Basin Plan Amendment (Delta TMDL) as having aquatic life beneficial uses (McClure *et al.*, 2006). Other exceptions were water bodies such as the Colusa Basin Drain, which is listed in the Surface Water Bodies and Beneficial Uses portion of the Basin Plan, and water bodies that had no label of creek, slough, or river, such as “Auburn Ravine.” We looked at the unlabeled water bodies on a case-by-case basis and generally included them in our identification of named natural streams.

Staff used four sources of information in order to identify natural streams. These sources were:

- The Reach File 3 (RF3) which is a Geographical Information System (GIS) coverage released by the USEPA (USEPA, 1998).
- “The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins” from which we incorporated additional natural streams identified on the “Sacramento Hydrologic Basin Planning Area” and/or “San Joaquin Hydrologic Basin Planning Area” maps (Basin Plan maps). These maps accompany the Basin Plan (CRWQCB-CVR, 2006; SWRCB, 1986).
- Literature that described studies of aquatic life within natural streams that had not been identified using either the RF3 or Basin Plan maps.
- Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos Total Maximum Daily Load and Basin Plan Amendment (McClure *et al.*, 2006).

Within the four sources of information, only named natural streams located within the Project Area were identified and subsequently listed at the end of the report (Table 1 and Delta TMDL water bodies were listed in Table 3). The named natural streams were identified and organized

according to which of the three subareas they were located within (the Lower Sacramento River Watershed, the Lower Delta Watershed, or the Lower San Joaquin River Watershed) and by which source of information they were derived from – the Delta TMDL, the RF3, the Basin Plan maps, or the literature.

The initial identification of named natural streams within the Project Area was made using the Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos Total Maximum Daily Load and Basin Plan Amendment (Delta TMDL). The State Water Resources Control Board adopted the Delta TMDL in May of 2007. Included in the TMDL was a section denoting WARM and COLD beneficial uses of the listed Delta water bodies. Aquatic life beneficial uses of the 146 Delta water bodies included freshwater habitat for warm and cold water species (WARM and COLD), migration of aquatic organisms, warm and cold water species (MIGR), and spawning, reproduction and/or early development of fish (SPWN). We have included the Delta water bodies in this report. Figure 4 is a map showing the Delta water bodies and Table 3 gives names of the water bodies (McClure *et al.*, 2006).

Additional water bodies were found in Reach File 3 (RF3). The RF3 is a GIS coverage released by the USEPA and is based on a United States Geological Survey (USGS) Digital Line Graph at a scale of 1:100,000 (USEPA, 1998). Within this coverage, approximately 20 percent of the water body segments in the RF3 file are named (i.e., the “Pname” value for the associated water body is not blank, but instead has a stream name).

More water bodies were added by using the “Sacramento Hydrologic Basin” and “San Joaquin Hydrologic Basin” maps (CRWQCB-CVR, 2006, SWRCB, 1986). The Basin Plan maps were available only in a hardcopy paper form, so water bodies with names that had not been identified using the RF3, were added to the list.

While assembling literature describing aquatic life within natural water bodies, we found evidence of aquatic life data for water bodies that were not named in the RF3, the Delta TMDL, or the Basin Plan maps. Just like the water bodies listed from the RF3 and the Basin Plan maps, we added these natural streams to the list.

The list does not include every water body that had biological community monitoring, and staff recognizes that these water bodies are only an easily identifiable representation of natural streams within the Project Area. In fact, the list of natural streams and aquatic life studies we described in this report should not be considered as complete. There are other biological studies that were not included because of staff time and resource limitations, and not every natural stream has been studied. This should not be construed as indicating that unidentified streams do not support biological communities or that they lack aquatic life beneficial uses.

Natural stream names were listed and locations described within the Hydrologic Basins from the Basin Plan (CRWQCB-CVR, 2006). In some cases, several water bodies had the same name, and we described the locations as carefully as possible. In other cases, water bodies had the same name and were located within the same geographical area, so we were careful to describe locations. Forks and branches of water bodies were listed separately from the mainstem water body. Delta TMDL water bodies were named in a separate table.

Please see Figures 3, 4, and 5 for a map of the named water bodies in the Sacramento Subarea, Delta Subarea, and the San Joaquin Subarea. Table 1 shows names and locations of the named water bodies listed by subarea and by the source from which we derived the water body name. Table 3 gives the names of the Delta TMDL water bodies.

III. AQUATIC LIFE IN THE CENTRAL VALLEY PESTICIDE BASIN PLAN AMENDMENT PROJECT AREA

1. Description of Aquatic Life Beneficial Uses

Freshwater habitat beneficial use designations have been defined as the most sensitive existing beneficial uses to many of the pesticides used in the Central Valley (Karkoski *et al.*, 2003; Beaulaurier *et al.*, 2005; McClure *et al.*, 2006). These two freshwater habitat beneficial uses were Warm Freshwater Habitat (WARM) and Cold Freshwater Habitat (COLD) and may be applicable to water bodies in the Project Area. In addition to those two freshwater habitat beneficial uses, we considered other sensitive existing beneficial uses likely appropriate to natural streams in the Project Area. These other sensitive beneficial uses included Migration of Aquatic Organisms (MIGR – cold and/or warm) and Spawning, Reproduction and/or Early Development (SPWN – cold and/or warm). All four beneficial use designations are defined within the Basin Plan as follows:

WARM: “Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.”

COLD: “Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.”

MIGR: “Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.”

SPWN: “Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish” (CRWQCB-CVR, 2006).

Although other beneficial uses may exist in Project Area water bodies, staff only included these four beneficial uses, which we will refer to as “Aquatic Life Beneficial Uses” or “Aquatic Life Uses.” In future Basin Plan Amendments, aquatic life beneficial uses may be described in the water bodies we have listed in this report.

2. Biological Community Data Literature Search

Regional Water Board staff conducted a literature review for information regarding the presence or absence of aquatic life occurring in Project Area water bodies. Our literature review did not include all sources containing aquatic life use data, only sources that were readily available. Primarily we found descriptions of macroinvertebrate bioassessment data and fish survey data. In order to display and discuss the aquatic life data, we classified and

reported them into two categories. Please note that we refer to the “data” in this report despite only reviewing the studies in which the data were described.

The first category that the aquatic life data were divided into included data that had been sampled at a specific site; we will refer to these data throughout the report as **site-specific data**. Within the compiled literature, the authors usually included a description of the macroinvertebrate and/or fish data and, in a few cases, provided the raw data in the report. We did not list raw data for two main reasons. First, we simply needed to verify presence of aquatic life rather than needing to ascertain water body health, or the macroinvertebrate composition of the water body. Second, the raw data were often not listed within the document and were unavailable or difficult to obtain from the authors. For several studies, the authors did not include the specific locations of the sites where the data were collected, so in each of these cases an author was contacted to obtain the site location information.

The second category of aquatic life data included a description of water body reaches that the fish inhabited during part of their life cycle; we will refer to these data as **critical habitat data**. The National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NMFS) provided Central Valley steelhead and Central Valley spring-run Chinook salmon critical habitat data in a GIS shapefile format. NMFS presented the critical habitats by water bodies, and so were not site-specific.

In the following section, we will summarize the two main types of studies compiled, those studies containing macroinvertebrate and fish **site-specific** data, and those studies containing Chinook and steelhead **critical habitat** data.

3. Fish and Macroinvertebrate Site-Specific Data

The literature included 10 macroinvertebrate bioassessment studies and two fish site-specific studies. Biological communities had been sampled by many groups including the University of California, Davis (UC Davis), Department of Fish and Game (DFG), the Central Valley Regional Water Quality Control Board (Regional Water Board), the University of Maryland (UM), the United States Geological Survey (USGS), and the Department of Pesticide Regulation (DPR).

Staff wrote a brief summary of each of the 12 studies, including the verified presence of aquatic life within the water bodies, who collected the data, what data were collected, how those data were collected, and what was done with the data (for example, were metrics calculated?). The synopses are listed below and are presented by study type (macroinvertebrate then fish) and then alphabetically by author. Since each synopsis is listed by the author(s) name and year of publication, the full citations can be found in Table 4 (corresponding by number) or in the “References” section at the end of the document. Table 4 also lists summaries of the study parameters of each study.

The site-specific data were mapped throughout the Central Valley Project Area (Figure 6). Table 2 contains the corresponding list of sites.

A. Synopses of Macroinvertebrate Site-Specific Data Reports

1. Bacey and Spurlock, 2005

From 2002-2004, the Department of Pesticide Regulation (DPR) sampled benthic macroinvertebrates (BMI), which are “animals inhabiting the substratum [bottom] of lakes, streams, estuaries, and marine water” (Eaton *et al.*, 2001). DPR sampled BMIs within four creeks in the Sacramento area. DPR staff concurrently sampled BMI populations, collected water and sediment samples to analyze for pesticides such as organophosphates and pyrethroids, made measurements of basic water quality parameters including temperature, and assessed physical habitat assessment at each site. The BMI samples were collected using USEPA modified methods, identified, and analyzed using several biological metrics in order to determine the relationship of select water quality parameters to various BMI classifications (taxa, abundance, feeding habits etc.). In every sample collected, macroinvertebrates were present within the benthos (bottom substrate of the water body).

2. Brown and May, 2000

The U.S. Geological Survey (USGS) collected macroinvertebrate samples from riffles or large woody debris at sites within the San Joaquin River and Sacramento River drainages from 1993-1997. Although information for 53 sites was published by the USGS, 63 sites were sampled in all during the study. When we requested sample site coordinates from the author, USGS staff provided site coordinates for all 63 sites assuring us that aquatic life was found at all sites (May, pers. comm.).

USGS staff collected macroinvertebrate samples from riffles and large woody debris in this study. Staff collected samples within the substrate of riffles to a depth of 10 centimeters using a large kick net. The net was placed downstream of the sampling area to catch the macroinvertebrates pushed by the water bodies current into the net when the substrate was disturbed. When collecting samples from submerged snags, staff scrubbed the area of a submerged snag so that macroinvertebrates present on the snag flowed downstream into a net. At each sampling location, teams took physical habitat measurements and made observations as well as measuring some basic water quality parameters such as temperature. Various statistical analyses were run on the data in order to determine how environmental factors and sampling methods affected results. Staff identified a total of 81 taxa to family within the 53 sites described in the published report.

3. Brown and May, 2004

The USGS collected macroinvertebrate samples from pieces of submerged woody debris from five sites within the San Joaquin River Basin in June and September of 2001. Staff made physical habitat measurements and observations, and measured velocity and specific conductance. USGS taxonomists identified a total of 161 taxa of periphyton and 126 taxa of macroinvertebrates collected from the five sites sampled. Staff analyzed the data in order to discover existing conditions and to find relationships between the macroinvertebrate and periphyton community conditions and environmental conditions. At all five sites sampled, aquatic life was present.

4. CRWQCB-CVR, 2003

Regional Water Board staff collected macroinvertebrate samples at 16 locations throughout the Cow Creek watershed. In addition, staff took some basic water quality and flow measurements. Macroinvertebrate were sampled according to the California Stream Bioassessment Procedure developed by the Department of Fish and Game (DFG) (Harrington, 1999). DFG Aquatic Bioassessment Laboratory taxonomists identified macroinvertebrates and

the resultant data were analyzed in order to provide information about water quality for the agency and to track changing population diversity through time. At every site sampled, BMIs were present.

5. de Vlaming *et al.*, 2004

The University of California, Davis Aquatic Toxicology Laboratory (UC Davis ATL) collected BMI samples from five agriculture-dominated and three effluent-dominated tributaries within the Lower Sacramento River Watershed from 2000-2002; multiple samples were collected along each tributary. BMI samples and physical habitat parameters were collected concurrently at the eight water bodies using California Stream Bioassessment Procedure (Harrington, 1999). UC Davis ATL taxonomists identified BMI samples and ran several statistical analyses in order to explain the relationships between habitat conditions in agriculture- and effluent-dominated water bodies and with BMI community composition. BMIs were found at all sites sampled.

6. de Vlaming *et al.*, 2005

The UC Davis ATL collected and analyzed BMI samples from effluent- and agriculture-dominated water bodies within the San Joaquin River watershed. In addition to BMI samples, UC Davis field crews made physical habitat observations and measurements and collected basic water quality data. The crews collected samples in June and September of 2001 using the California Stream Bioassessment Procedure (Harrington, 1999). Field crews also collected water samples for analysis of metals, nutrients, total organic carbon, and biological oxygen demand; basic water quality measurements were made on site. Taxonomists identified a sub-sampling of 300 BMIs and several analyses were done on the data in order to explore the relationships between BMI populations, water quality, and physical habitat. BMIs were present at every location samples were collected.

7. Hall and Killen, 2005

Staff from the University of Maryland (UM), Agricultural Experiment Station, collected BMI at 10 riffle sites along Orestimba Creek in Stanislaus County. One site was situated upstream of agricultural activity, and the other nine sites were located downstream of the agricultural activity. From 2000-2002, UM staff made physical habitat measurements and observations in addition to basic water quality measurements. Staff collected BMI samples by placing a D-net downstream of the sampling substrate, and then disturbing the substrate so BMIs present flowed into the net. Several statistical analyses were done on the data. BMIs were found at every site sampled.

8. Markiewicz *et al.*, 2005

UC Davis, Aquatic Toxicology Laboratory staff collected 22 BMI samples from tributaries of the San Joaquin River to ascertain the "community structure" of the macroinvertebrates, and assess the physical habitat conditions of the streams. Teams collected samples using the USEPA's multi-habitat sampling method from their rapid bioassessment protocol (Barbour *et al.*, 1999) and the California Stream Bioassessment Procedure (Harrington, 1999). The Aquatic Toxicology Lab identified a sub-sample of the organisms collected and then did multivariate and multimetric analyses. Macroinvertebrates were present at every site sampled.

9. Ode *et al.*, 2000

DFG staff collected macroinvertebrate samples for the Sacramento River Watershed Project from September-November 2000 at 37 sites within the Sacramento River watershed. Teams collected samples using either the California Stream Bioassessment Procedure (Harrington, 1999) or the USGS snag sampling method (described in Brown and May, 2000). The DFG Aquatic Bioassessment Laboratory identified and analyzed the macroinvertebrate samples. The data were used to calculate and summarize metric values of the macroinvertebrate communities. DFG Staff collected macroinvertebrates at every site sampled.

10. Ode *et al.*, 2005

DFG staff collected BMI samples from streams and sloughs in the Central Valley. DFG teams collected BMI samples in 2004 from 30 sites using the USEPA's Environmental Monitoring and Assessment Program 11-transect reach-wide benthos method (Peck *et al.* 2003). In addition to BMI collection, DFG staff concurrently made physical habitat measurements and observations and measured basic water quality parameters. The DFG Aquatic Biology Laboratory identified the BMI samples and analyzed the data using several methods. The goal of this research was to assist the Regional Water Board in developing a method of bioassessment that could be used to measure water quality. At all sites sampled, DFG found and collected BMIs.

B. Synopses of Fish Site-Specific Data Reports

11. Brown, 2000

USGS staff sampled fish at 20 sites within the San Joaquin River drainage from 1993 to 1995. The fish were collected for several reasons including characterizing the fish species in the watershed and assessing associations of the species with water quality and habitat quality. Out of the 31 taxa collected, only 10 taxa were native to the lower San Joaquin River drainage. USGS staff used several metrics to analyze the fish data.

12. May and Brown, 2002

The USGS sampled fish at 22 sites within the Sacramento River Basin from 1996 to 1998. Staff took water quality measurements and assessed habitat conditions in relation to the fish communities found at the sites. Out of the 36 taxa of fish collected, 13 taxa were native to the basin. The USGS performed several analyses on the data and several metrics were calculated in order to determine whether an Index of Biotic Integrity could be developed for the Sacramento River Basin.

4. Central Valley Steelhead and Central Valley Spring-Run Chinook Salmon Critical Habitat Data

The National Oceanic and Atmospheric Administration (NOAA)'s National Marine Fisheries Service (NMFS) provided Central Valley steelhead (steelhead) and Central Valley spring-run Chinook salmon (Chinook) **critical habitat** data. Rather than being site-specific, the critical habitat data provided fish locations and habitat in terms of water body reaches. Regional Water Board staff downloaded critical habitat data from NMFS's website as Geographic Information Systems (GIS) shapefiles (Gavette, 2005a; Gavette, 2005b). The GIS shapefile provided a graphical depiction of the Chinook and steelhead critical habitats, and an associated table included information such as the water body name and the use of the water

body by the Chinook and steelhead. We used the data to verify the presence of fish within Project Area water bodies.

A. Background and Description of NMFS Data

The federal government is required to designate “critical habitat” for species listed by the Endangered Species Act (ESA). “Critical habitat” is defined in the ESA, section 3(5)(A) as:

- (i) the specific areas within the geographical area occupied by the species, at the time it is listed... on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protections; and
- (ii) specific areas outside the geographical area occupied by the species at the time it is listed... upon a determination by the Secretary that such areas are essential for the conservation of the species.

The National Marine Fisheries Service (NMFS), a branch of the National Oceanic and Atmospheric Administration (NOAA), reviewed and collected data for several fish groups. Within the Central Valley Pesticide Basin Plan Amendment Project Area (Project Area), NMFS had identified two distinct population segments, which they described as Evolutionarily Significant Units (ESUs). NMFS designated critical habitat for the ESUs rather than for species and identified two ESUs in the Central Valley: the Central Valley Spring-run Chinook ESU and the Central Valley steelhead ESU (NOAA, 2005).

NMFS’s biologists determined that Chinook and steelhead were present during some stage of life in all water bodies included in the critical habitat data; these life stages included adult migration and spawning, and juvenile rearing and migration (NOAA, 2005; Gavette, 2005a; Gavette, 2005b).

The Central Valley spring-run Chinook salmon critical habitat includes between 1,000 and 1,500 miles of streams, and about 250 square miles of estuary. The water body segments that are within the Project Area range from the Redding area, which is within the northernmost portion of the Sacramento subarea, to east of Stockton, which is within the Delta subarea. Chinook use the water bodies for adult spawning, holding and migration, juvenile rearing and migration, and non-natal rearing (NOAA, 2005; Gavette, 2005b). A map of the critical habitat of the Chinook is shown in Figure 7 and Table 1 contains a column indicating the names and locations of the water bodies.

The Central Valley steelhead critical habitat includes approximately 2,300 miles of streams and about 250 square miles of estuary. The northernmost water bodies that the steelhead inhabit are near the Redding-area in the Sacramento subarea. The southernmost water body is the Merced River which is north of Merced within the San Joaquin subarea. Steelhead use the water bodies for adult migration and spawning, and juvenile rearing and migration (NOAA, 2005; Gavette 2005a). A map of the water bodies included in the steelhead critical habitat is shown in Figure 8 and Table 1 contains a column indicating the names and locations of the water bodies.

IV. DISCUSSION AND CONCLUSIONS

The purpose of this report was to identify natural streams located within the Project Area for use and support of TMDLs developed by the Central Valley Water Board. The literature that we compiled in this report showed evidence of various types of aquatic life in natural streams throughout the Project Area.

Both site-specific data and critical habitat data suggest aquatic life uses such as Warm Freshwater Habitat, Cold Freshwater Habitat, Migration of Aquatic Organisms, and Spawning, Reproduction and/or Early Development, exist within Project Area natural streams. Furthermore, within each and every site described in the site-specific studies we reviewed, aquatic life presence was confirmed; each site was reported as containing aquatic life. This review of available field studies suggests that aquatic life exists within all natural Central Valley streams within the Project Area.

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**Figure 1 – Central Valley Pesticide Basin Plan Amendment Project Area (Project Area)
Nested Within the Regional Water Quality Control Board – Central Valley Region
Boundaries**

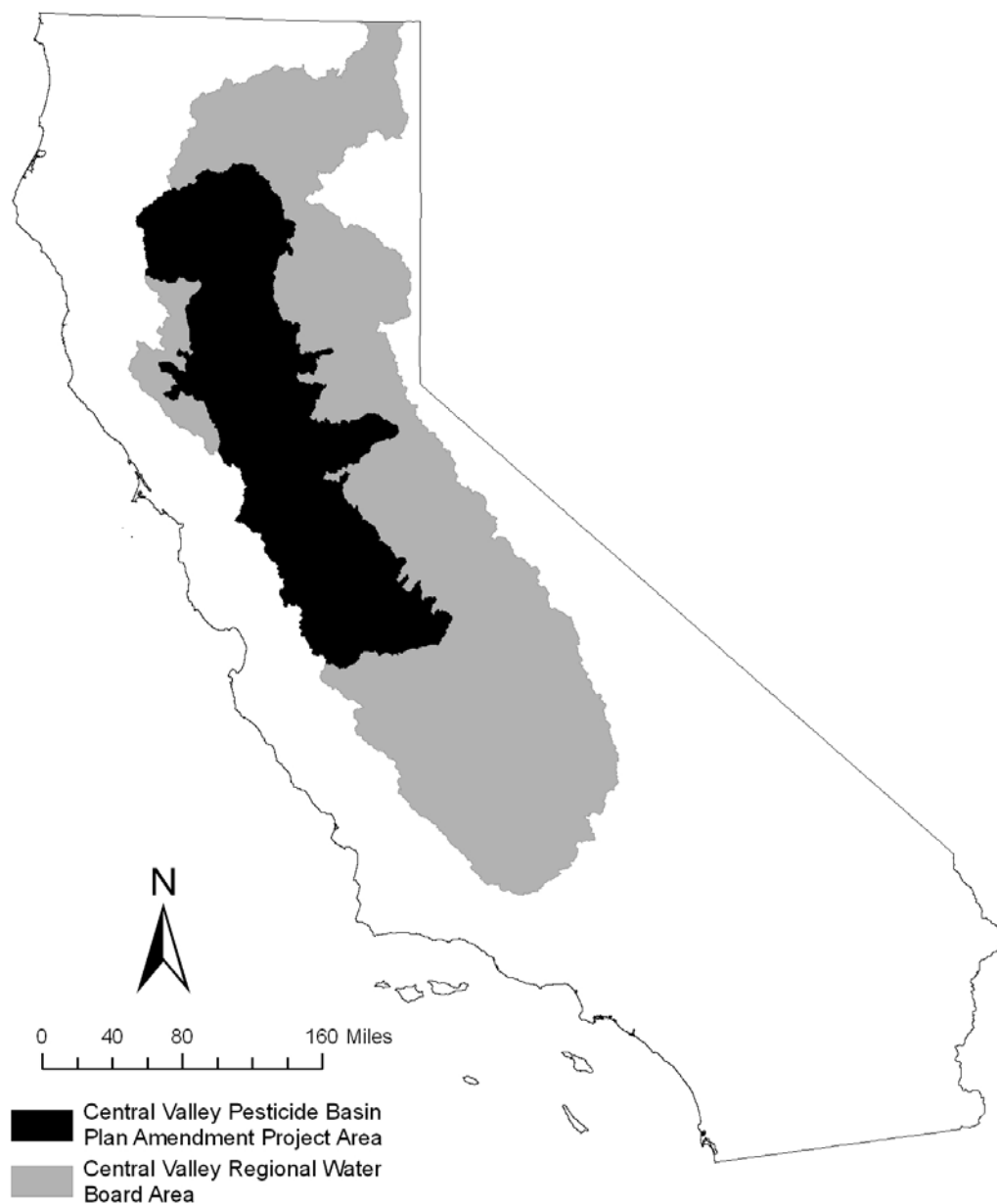


Figure 2 – Project Area Subareas Within the Central Valley Pesticide Basin Plan Amendment Project Area – Lower Sacramento River Watershed (Sacramento Subarea), Lower Delta Watershed (Delta Subarea), and Lower San Joaquin River Watershed (San Joaquin Subarea)

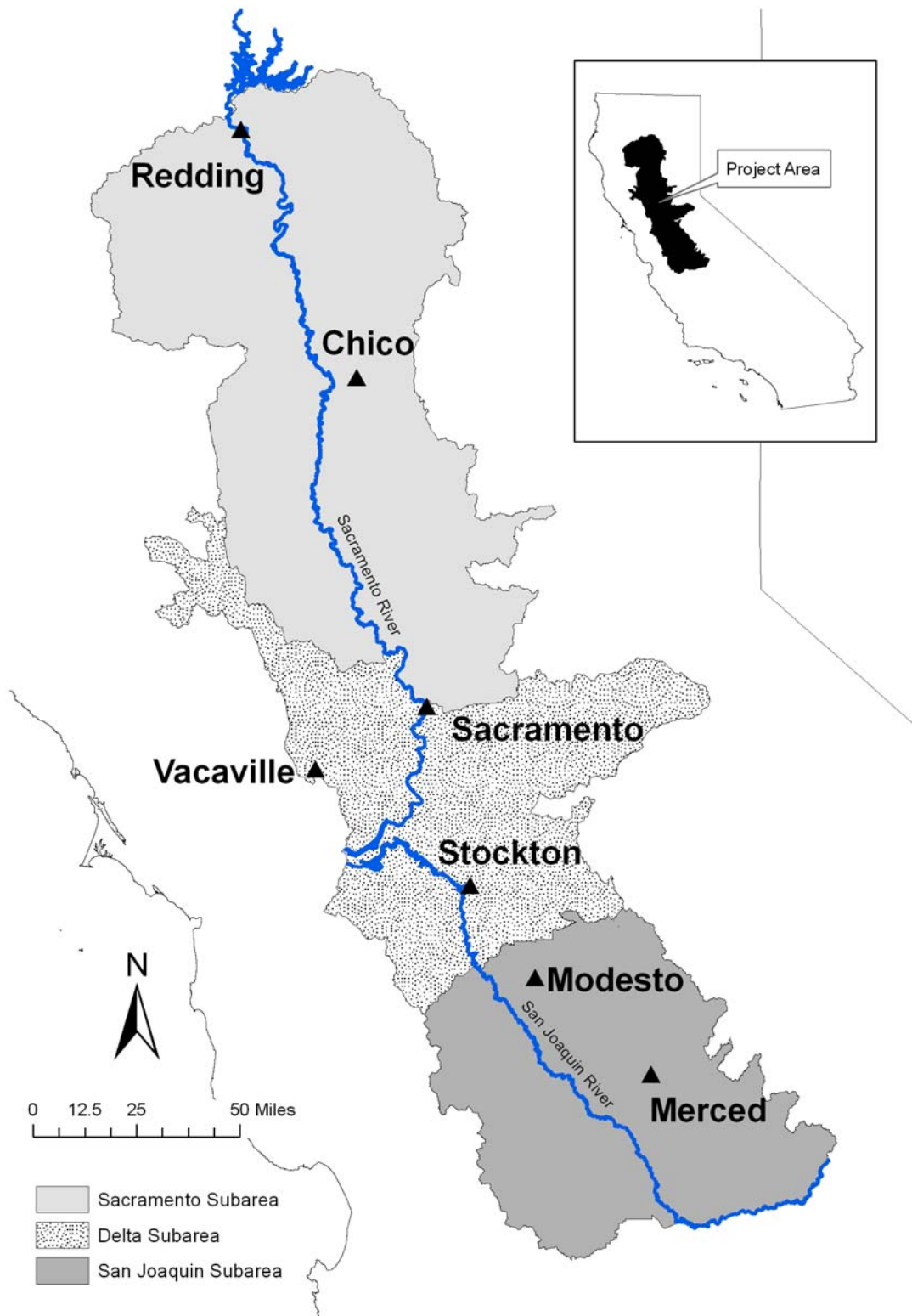


Figure 3 – Lower Sacramento River Watershed (Sacramento Subarea) Named Water Bodies Within the Central Valley Pesticide Basin Plan Amendment Project Area

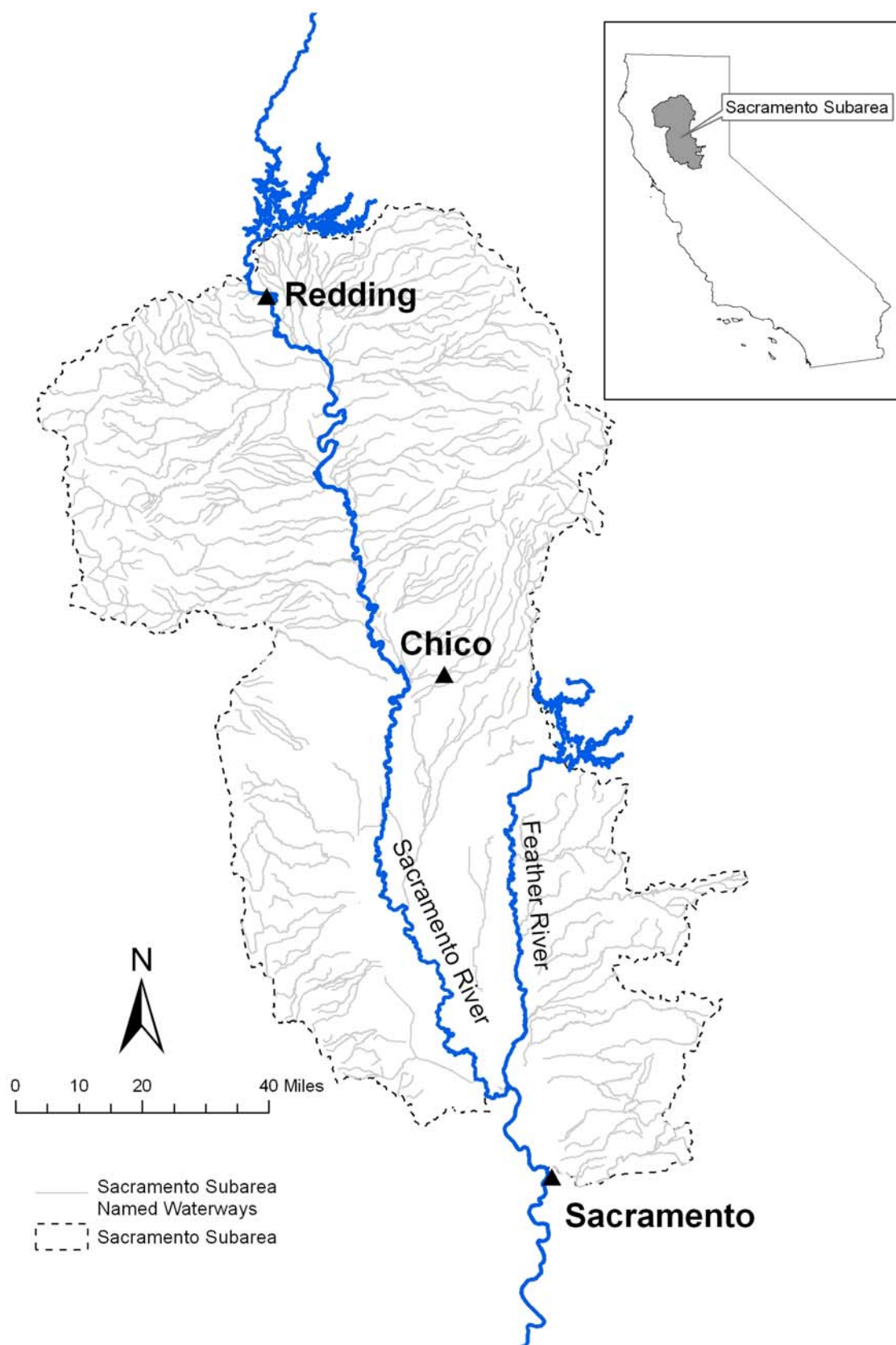


Figure 4 – Lower Delta Watershed (Delta Subarea) Named and Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos Total Maximum Daily Load (TMDL) Water Bodies and Within the Central Valley Pesticide Basin Plan Amendment Project Area

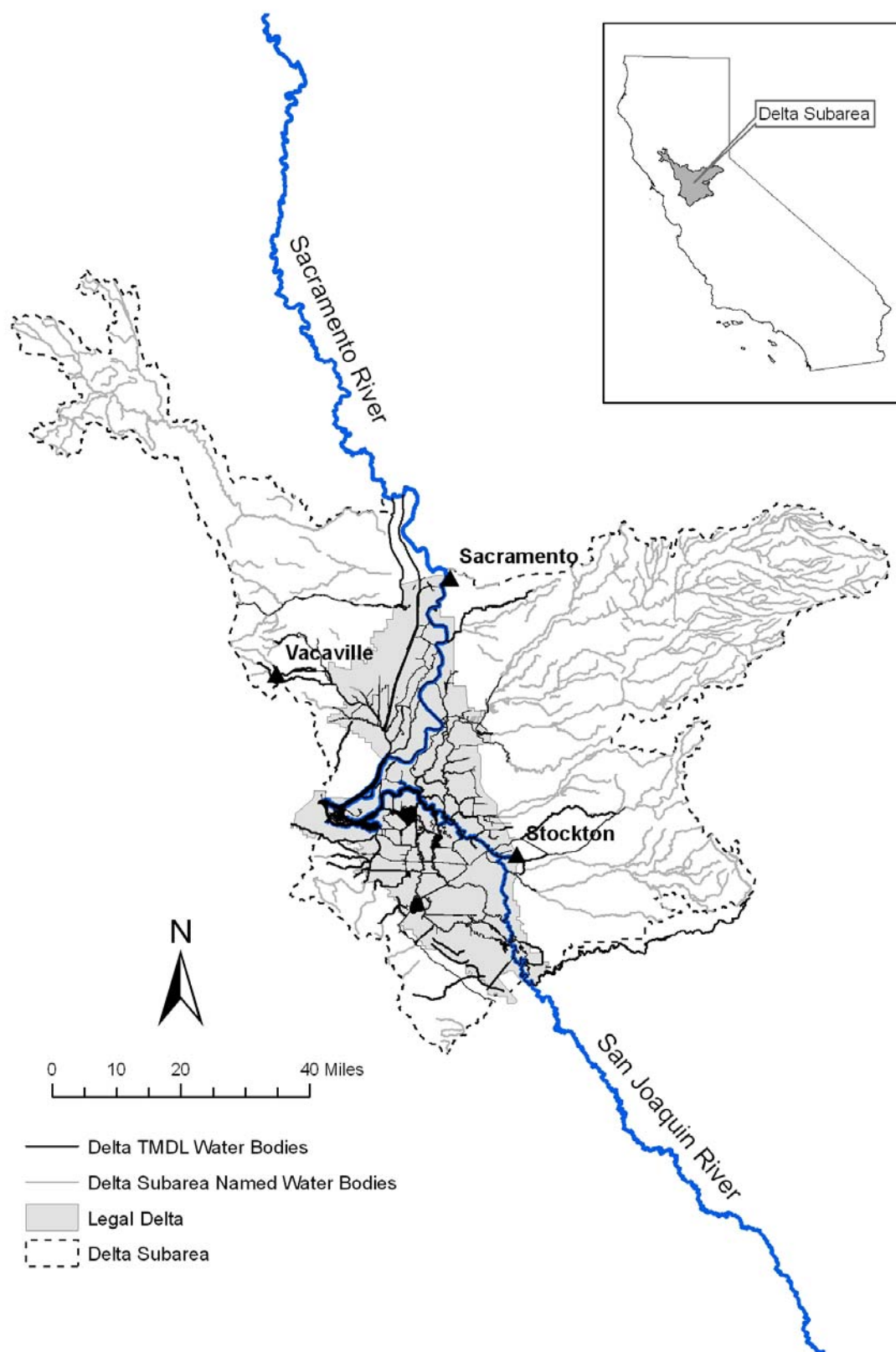


Figure 5 – Lower San Joaquin River Watershed (San Joaquin Subarea) Water Bodies Within the Central Valley Pesticide Basin Plan Amendment Project Area

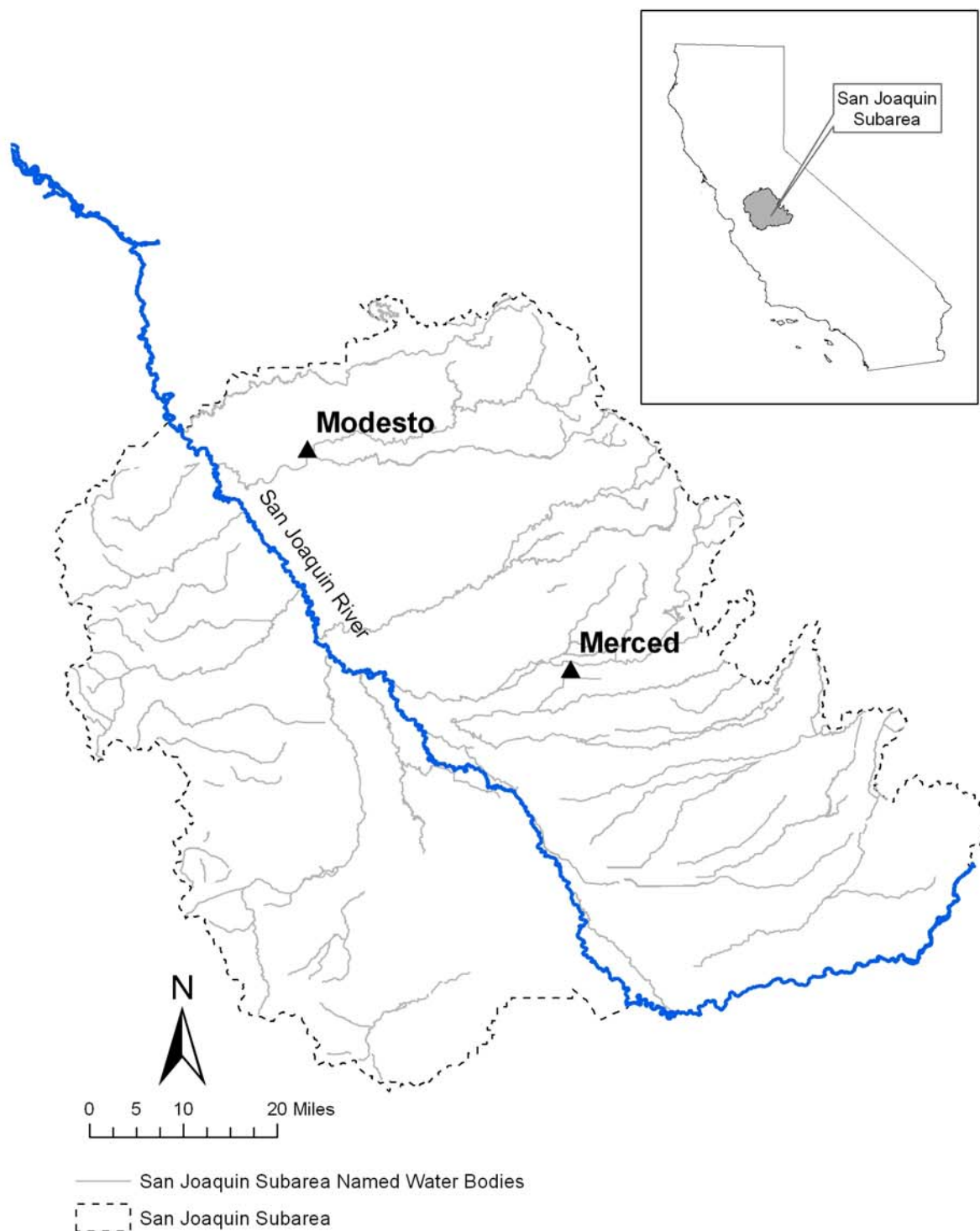


Figure 6 – Macroinvertebrate and Fish Site-Specific Sampling Locations Within the Central Valley Pesticide Basin Plan Amendment Project Area

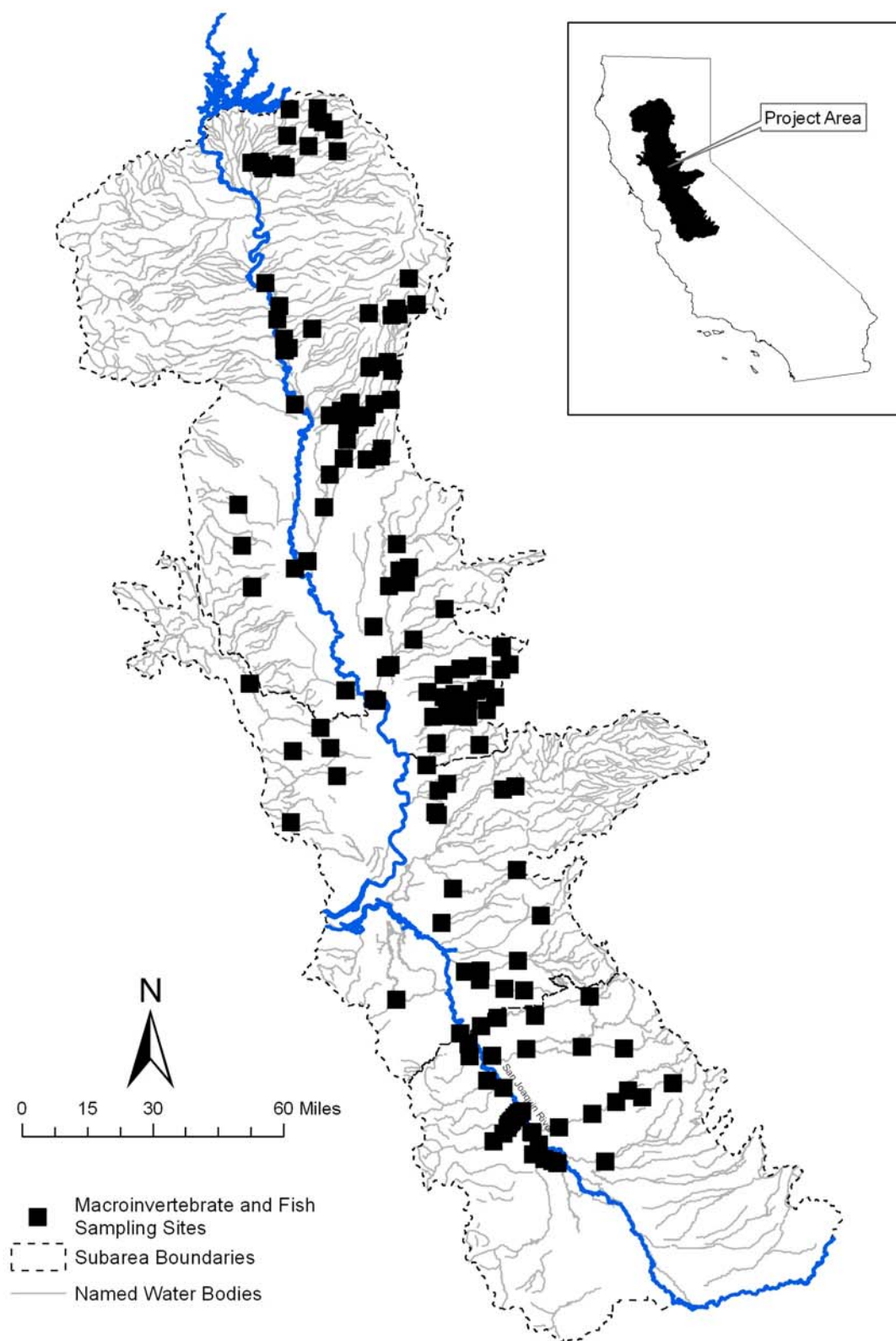


Figure 7 – Central Valley Spring-Run Chinook Salmon Critical Habitat Within the Central Valley Pesticide Basin Plan Amendment Project Area (Gavette, 2005b; NOAA, 2005)

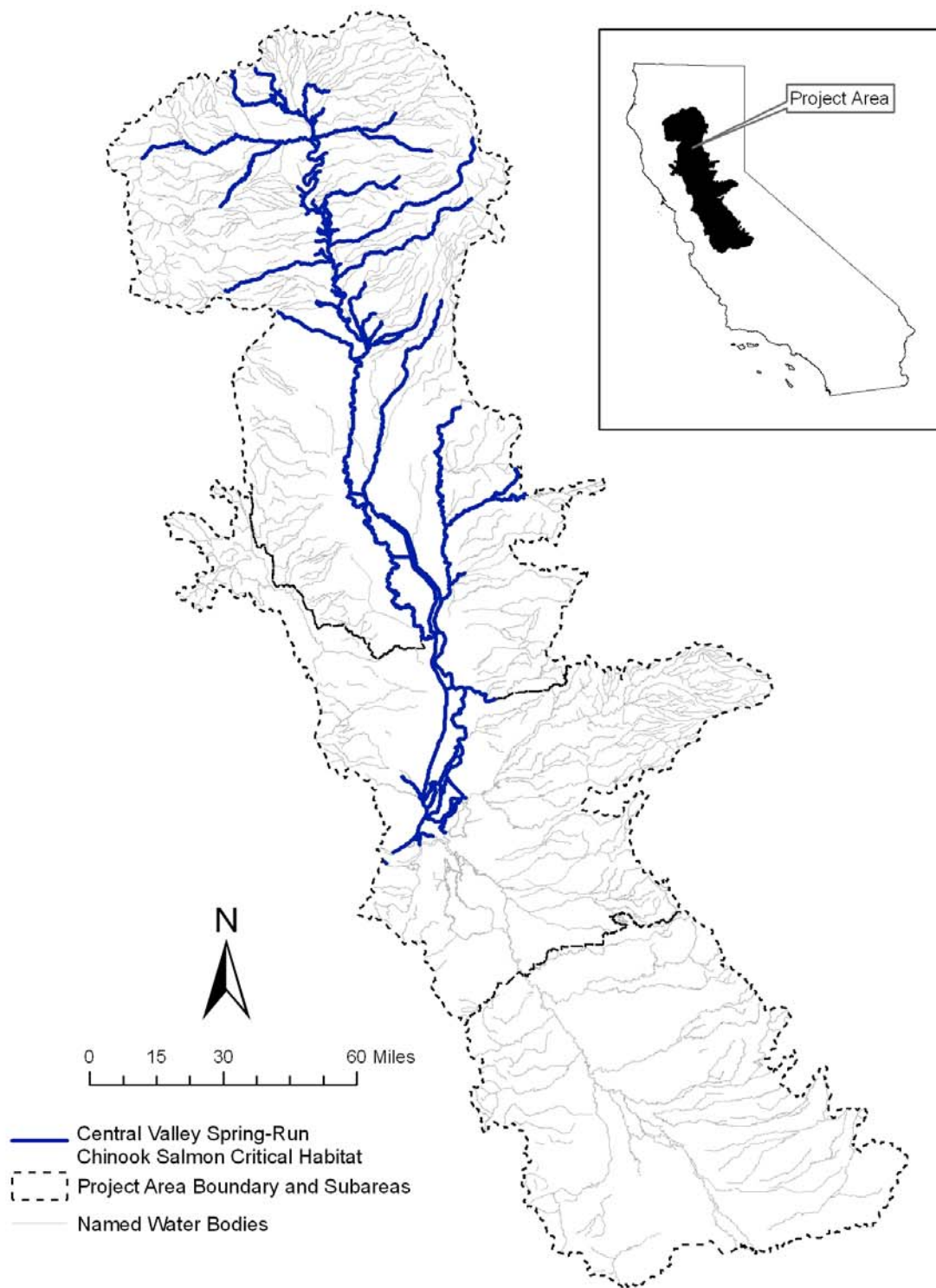
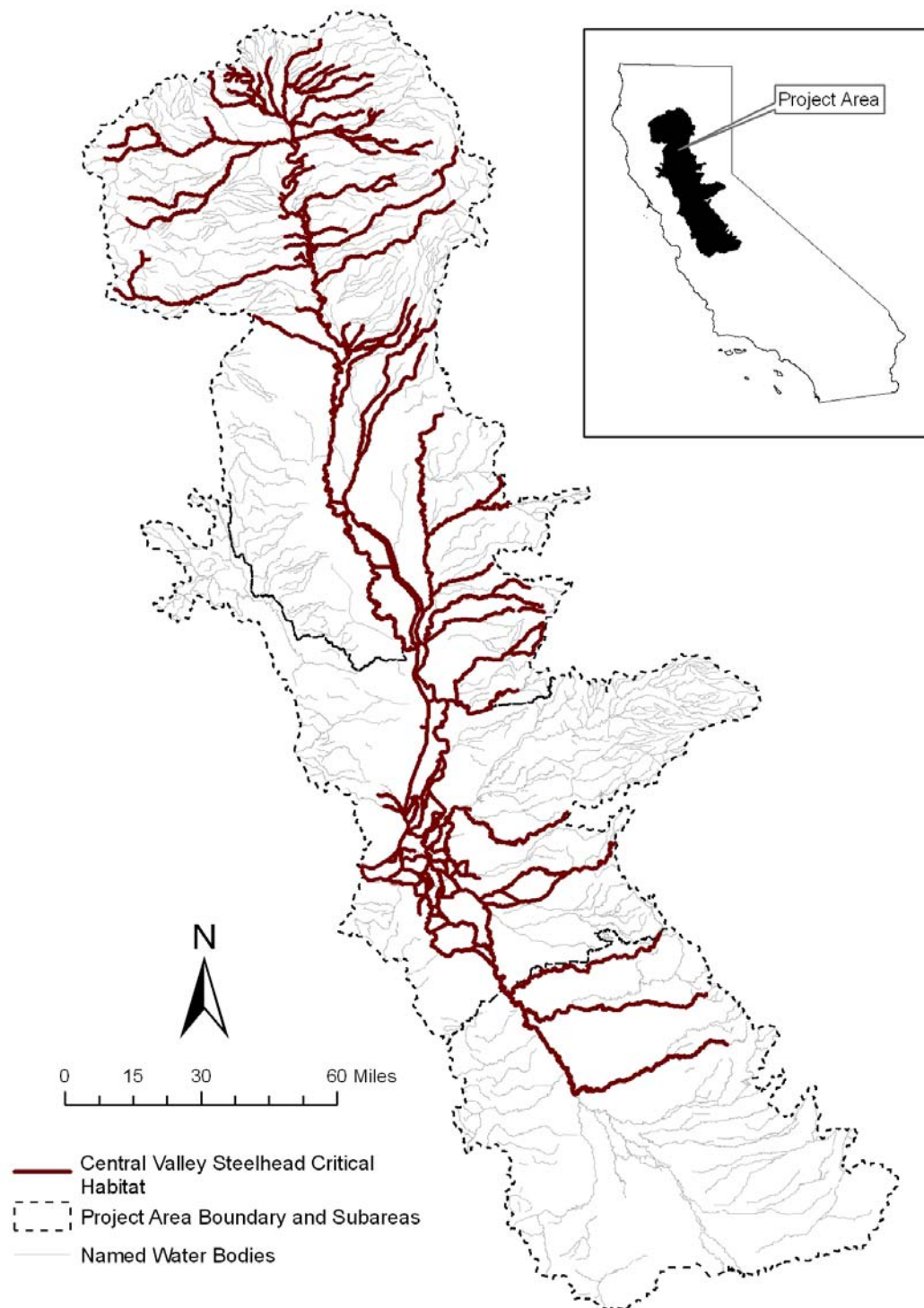


Figure 8 – Central Valley Steelhead Critical Habitat Within the Central Valley Pesticide Basin Plan Amendment Project Area (Gavette, 2005a; NOAA, 2005)



**Table 1 – Named Water Bodies Within the Central Valley Pesticide Basin Plan
Amendment Project Area**

* Shaded water bodies are already listed within the Basin Plan (CRWQCB-CVR, 2006)

* Hydrologic Unit refers to the Basin Plan Map (SWRCB, 1986)

* C = presence of Central Valley Spring-Run Chinook Salmon (NOAA, 2005)

* S = presence of Central Valley Steelhead (NOAA, 2005)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Adobe Creek	SE of Patterson	542	Reach File 3			San Joaquin
Aiken Gulch	SW of Redding	508, 524	Reach File 3			Sacramento
Alder Creek	W of Red Bluff	523	Reach File 3			Sacramento
Alder Creek	S of Folsom	519, 532	Reach File 3	x		Sacramento
Amador Creek	Amador City	532	Reach File 3			Delta
American River	E of Sacramento	519	Reach File 3	x	C, S	Sacramento, Delta
Anderson Creek	Near Anderson	508	Reach File 3		C	Sacramento
Andrews Creek	W of Redding	524	Reach File 3			Sacramento
Angel Slough	Chico to N of Colusa	520	Reach File 3			Sacramento
Antelope Creek	NW Williams	520	Reach File 3			Sacramento
Antelope Creek	E of Red Bluff	504, 509	Reach File 3		C, S	Sacramento
Antelope Creek	NE Sacramento area	519	Reach File 3	x		Sacramento
Antelope Creek (Middle Fork)	W of Chester	509	Reach File 3		S	Sacramento
Antelope Creek (North Fork)	E of Red Bluff	509	Reach File 3		C, S	Sacramento
Antelope Creek (South Branch)	NE Sacramento area	519	Reach File 3			Sacramento
Antelope Creek (South Fork)	W of Chester	509	Reach File 3		C, S	Sacramento
Arcade Creek	E of Sacramento	519	Reach File 3	x		Sacramento
Arkansas Creek	SE of Rancho Murieta	531	Reach File 3			Delta

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Ash Creek	E of Anderson	507, 508	Basin Plan Map		C, S	Sacramento
Ash Slough	Near Chowchilla	545	Basin Plan Map			San Joaquin
Atkins Creek	E of Redding	507	Reach File 3			Sacramento
Auburn Ravine	Lincoln	519	Basin Plan Map	x	S	Sacramento
Auger Creek	W of Corning	523	Reach File 3			Sacramento
Avery Creek	E of Red Bluff	519	Reach File 3			Sacramento
Badger Creek	SW of Wilton	531	Reach File 3			Sacramento
Badger Creek (North Fork)	SW Wilton area	531	Reach File 3			Delta
Bailey Creek	E of Anderson	507	Reach File 3			Sacramento
Bailey Creek (North Fork)	NW of Chester	507	Reach File 3			Sacramento
Bailey Creek (South Fork)	NW of Chester	507	Reach File 3			Sacramento
Baker Creek	SE of Hayfork	524	Reach File 3			Sacramento
Baker Slough	SW of Willows	520	Reach File 3	x		Sacramento
Baldwin Creek	E of Anderson	507	Reach File 3		S	Sacramento
Baltic Creek	SE of Pollock Pines	532	Reach File 3			Delta
Basin Creek	W of Los Molinos & Tehama	523	Reach File 3			Sacramento
Basin Hollow Creek	E of Redding	507, 508	Reach File 3			Sacramento
Battle Creek	SE of Anderson	507, 508	Reach File 3		C, S	Sacramento
Battle Creek (North Fork)	E of Redding	507	Reach File 3		C, S	Sacramento
Battle Creek (South Fork)	SE of Redding	507	Reach File 3		C, S	Sacramento
Beacon Creek	S of Sacramento area	519	Reach File 3			Delta
Beal Creek	E of Redding	507	Reach File 3			Sacramento
Bear Creek	W of Williams	513	Reach File 3			Delta
Bear Creek	N of Magalia	509	Reach File 3			Sacramento
Bear Creek	E of Anderson	507, 508	Reach File 3		C, S	Sacramento
Bear Creek	Merced	535	Reach File 3	x		San Joaquin

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Bear Creek (North Fork)	E of Redding	507	Reach File 3		S	Sacramento
Bear Creek (South Fork)	E of Redding	507	Reach File 3			Sacramento
Bear Meadow Creek	SE of Pollock Pines	532	Reach File 3			Delta
Bear River	Wheatland	515	Reach File 3	x	C, S	Sacramento
Beaver Creek	E of Los Molinos	509	Reach File 3			Sacramento
Bee Creek	W of Anderson	524	Reach File 3			Sacramento
Beegum Creek	SW of Redding	524	Reach File 3		C, S	Sacramento
Beegum Creek (Middle Fork)	S of Hayfork	524	Reach File 3			Sacramento
Beegum Creek (South Fork)	SW of Redding	524	Reach File 3			Sacramento
Benjamin Canyon	Rumsey area	511	Reach File 3			Delta
Bennett Creek	W of Corning	523	Reach File 3			Sacramento
Berenda Creek	N of Madera	545	Basin Plan Map			San Joaquin
Berenda Slough	S of Chowchilla	545	Reach File 3			San Joaquin
Berry Creek	W of Corning	523	Reach File 3			Sacramento
Best Slough	SE of Marysville and Yuba City	515	Basin Plan Map			Sacramento
Big Bear Creek	E of Los Molinos	509	Reach File 3			Sacramento
Big Canyon Creek	SE of Shingle Springs	532	Reach File 3			Delta
Big Chico Creek	Chico	504, 509, 521	Reach File 3	x	C, S	Sacramento
Big Crane Creek	NW of Cottonwood	508, 524	Reach File 3			Sacramento
Big Creek	E of Modesto	536	Reach File 3			San Joaquin
Big Dry Creek	E of Los Molinos	504, 509	Reach File 3			Sacramento
Big Indian Creek	NE of Plymouth	532	Reach File 3			Delta
Big Salt Creek	SW of Redding	524	Reach File 3			Sacramento
Big Springs Creek	NE of Oakdale	531, 534	Reach File 3			Delta
Bird Creek	S of Dunnigan	520	Reach File 3			Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Bird Creek (North Fork)	SW of Dunnigan	520	Reach File 3			Sacramento
Bird Creek (South Fork)	SW of Dunnigan	520	Reach File 3			Sacramento
Black Rascal Creek	NE to W of Merced	535	Reach File 3			San Joaquin
Blue Tent Creek	N of Red Bluff	504	Reach File 3		C, S	Sacramento
Boat Gunwale Creek	E of Red Bluff	509	Reach File 3			Sacramento
Bolt Creek	N of Magalia	521	Reach File 3			Sacramento
Bottle Creek	N of Magalia	521	Reach File 3			Sacramento
Boulder Creek	Northern Redding area	508	Reach File 3			Sacramento
Bounde Creek	W of Princeton	520	Reach File 3			Sacramento
Bowers Creek	W of Corning	523	Reach File 3			Sacramento
Brannin Creek	SW of Corning	504	Basin Plan Map			Sacramento
Bretona Creek	W of Zamora	520	Reach File 3			Sacramento
Brickyard Creek	NW of Red Bluff	504	Reach File 3			Sacramento
Bridges Creek	E of Redding	507	Reach File 3			Sacramento
Browns Creek	SE of Wilton	531	Reach File 3			Delta
Browns Creek	E of Turlock	537	Reach File 3			San Joaquin
Brownsville Creek	SE of Placerville	532	Reach File 3			Delta
Brush Creek	W of Red Bluff off Cottonwood Creek	524	Reach File 3			Sacramento
Brush Creek	N of Chico	504, 509	Reach File 3			Sacramento
Brush Creek	E of Anderson	507	Reach File 3		S	Sacramento
Brush Creek	W of Red Bluff	504	Reach File 3			Sacramento
Brush Creek	NE of Dunnigan	520	Reach File 3			Sacramento
Brushy Canyon	SE of Placerville	532	Reach File 3			Delta
Buck Creek	W of Red Bluff	524	Reach File 3			Sacramento
Buck Creek	W of Red Bluff and Slides Creek	524	Reach File 3			Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Buck Creek	W of Red Bluff and the other Buck Creek	524	Reach File 3			Sacramento
Buckeye Creek	NW of Woodland	520	Basin Plan Map			Sacramento
Buckeye Creek	Northern Redding	508	Reach File 3			Sacramento
Buckeye Creek (North Fork)	NW of Woodland	520	Basin Plan Map			Sacramento
Buckeye Creek (South Fork)	NW of Woodland	520	Basin Plan Map			Sacramento
Bull Creek	N of Magalia	521	Reach File 3			Sacramento
Butler Slough	SE of Red Bluff	504	NOAA Data		C, S	Sacramento
Burch Creek	SW to SE of Corning	504	Reach File 3		C	Sacramento
Burgoyne Creek	Within Rancho Murieta	531	Reach File 3			Delta
Burns Creek	NE of Merced	535, 538	Reach File 3			San Joaquin
Butte Creek	S of Pollock Pines	532	Reach File 3			Delta
Butte Creek	Chico to Colusa	509, 520, 521	Reach File 3	x	C, S	Sacramento
Butte Creek (West Branch)	N of Magalia	521	Reach File 3			Sacramento
Buttermilk Creek	W of Corning	523	Reach File 3			Sacramento
Cabin Creek	SE of Pollock Pines	532	Reach File 3			Delta
Cache Creek	N to NW of Woodland	511, 513	Reach File 3	x		Delta
Cache Creek (North Fork)	NE of Clearlake Highlands	513	Reach File 3			Delta
Calaboose Creek	Southern Redding	508	NOAA Data		S	Sacramento
Calf Creek	N of Magalia	509	Reach File 3			Sacramento
Calf Creek (North Fork)	E of Red Bluff	509	Reach File 3			Sacramento
Calvins Creek	W of Williams	520	Reach File 3			Sacramento
Cameron Creek	E of Red Bluff	509	Reach File 3			Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Camp Creek	SE of Placerville	532	Reach File 3			Delta
Camp Creek (North Fork)	SE of Placerville	532	Reach File 3			Delta
Camp Creek (South Fork)	SE of Placerville	532	Reach File 3			Delta
Campbell Creek	N of Chico	504, 509	Reach File 3			Sacramento
Canyon Creek	W of Chester, tributary to Mill Creek	509	Reach File 3			Sacramento
Canyon Creek	E of Anderson	507	Reach File 3			Sacramento
Canyon Creek	S of Redding	508	NOAA Data		S	Sacramento
Carson Creek	E of Sacramento area	531, 532	Reach File 3			Delta
Cary Pasture Creek	W of Corning	523	Reach File 3			Sacramento
Cascade Creek	E of Red Bluff	509	Reach File 3			Sacramento
Cashman Creek	SE of Oakdale	535	Reach File 3			San Joaquin
Cat Creek	SE of Pollock Pines	532	Reach File 3			Delta
Cave Creek	N of Chico	509	Reach File 3			Sacramento
Cedar Creek	SE of Placerville	532	Reach File 3			Delta
Cedar Creek	E of Redding	507, 523	Reach File 3			Sacramento
Cedar Creek	N of Magalia	521	Reach File 3			Sacramento
Chamisal Creek	W of Arbuckle	520	Reach File 3			Sacramento
Champlin Slough	E of Los Molinos	504	Reach File 3			Sacramento
Chandons Creek	SE of Clearlake	513	Reach File 3			Delta
Chicken Ranch Slough	Sacramento area	519	Reach File 3			Sacramento
Chowchilla River	N of Chowchilla	535, 538, 545	Reach File 3			San Joaquin
Churn Creek	Northern Redding	506, 508	Reach File 3		C, S	Sacramento
Cirby Creek	Roseville area	519	Reach File 3			Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Clark Creek	E of Rancho Murieta	532	Reach File 3			Delta
Clear Creek	S of Pollock Pines	532	Reach File 3			Delta
Clear Creek	SW of Pollock Pines	532	Reach File 3			Delta
Clear Creek	N of Magalia	521	Reach File 3			Sacramento
Clear Creek	E of Penn Valley	517	Reach File 3			Sacramento
Clear Creek	SW of Redding	508, 524	Reach File 3		C, S	Sacramento
Clear Creek (North Fork)	SW of Pollock Pines	532	Reach File 3			Delta
Clear Creek (South Fork)	W of Redding	524	Reach File 3			Sacramento
Clear Creek (West Branch)	S of Paradise	520, 521	Reach File 3			Sacramento
Clough Creek	E of Redding	508	Reach File 3			Sacramento
Clover Creek	E of Palo Cedro	508	Reach File 3			Sacramento
Clover Creek	E of Redding	507, 508	Reach File 3	x	S	Sacramento
Clover Creek	W of Red Bluff	504	Reach File 3			Sacramento
Clover Valley Creek	N of Rocklin	508	Reach File 3			Sacramento
Colby Creek	N of Magalia	521	Reach File 3			Sacramento
Cold Creek	E of Cottonwood	507	Reach File 3			Sacramento
Cold Spring Creek	W of Corning	523	Reach File 3			Sacramento
Comanche Creek	E of Chico	520, 521	Reach File 3	x		Sacramento
Coon Creek	N of Concow	521	Reach File 3			Sacramento
Coon Creek	Between Lincoln and Wheatland	514, 519	Reach File 3	x	S	Sacramento
Copsey Creek	S of Clearlake	513	Reach File 3			Delta
Corral Hollow Creek	S of Tracy	543	Reach File 3			Delta
Cortina Creek	S of Williams	520	Basin Plan Map			Sacramento
Cosgrove Creek	SE of Lone	531	Reach File 3			Delta

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Cosumnes River (Middle Fork)	E of Sacramento area	532	Reach File 3			Delta
Cosumnes River (North Fork)	E of Sacramento area	532	Reach File 3			Delta
Cosumnes River (South Fork)	E of Sacramento area	532	Reach File 3			Delta
Cosumnes River (Steely Fork)	S of Pollock Pines	532	Reach File 3			Delta
Cottonwood Creek	SE to SW of Cottonwood	508	Reach File 3		C, S	Sacramento
Cottonwood Creek	NW of Oroville	520	Reach File 3			Sacramento
Cottonwood Creek	NW of Fresno	545	Basin Plan Map			San Joaquin
Cottonwood Creek	N of Merced	535	Reach File 3			San Joaquin
Cottonwood Creek (Cold Fork)	SW of Cottonwood	508, 524	Reach File 3		S	Sacramento
Cottonwood Creek (Middle Fork)	W of Cottonwood	508, 524	Reach File 3		C, S	Sacramento
Cottonwood Creek (North Fork)	W of Cottonwood	508, 524	Reach File 3		S	Sacramento
Cottonwood Creek (South Fork)	SW of Cottonwood to W of Red Bluff	508, 524	Reach File 3		C, S	Sacramento
Cow Creek	E of Redding	508	Reach File 3	x	C, S	Sacramento
Cow Creek (South)	E of Redding	507, 508	Reach File 3	x	S	Sacramento
Coyote Creek	E of Sacramento area	531	Reach File 3			Delta
Coyote Creek	E of Galt	531	Reach File 3			Delta
Coyote Creek	NE of Corning	504	Reach File 3			Sacramento
Coyote Creek	S of Red Bluff	504	NOAA Data		C	Sacramento
Craig Creek	E of Red Bluff	504	Reach File 3		C, S	Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Crevis Creek	SE of Sacramento area	531	Reach File 3			Delta
Cripple Creek	Sacramento area in Citrus Heights	519	Reach File 3			Sacramento
Croney Creek	W of Corning	523	Reach File 3			Sacramento
Crow Creek	W of Anderson	508, 524	Reach File 3			Sacramento
Crow Creek	SW of Turlock	541, 542	Basin Plan Map			San Joaquin
Cub Creek	N of Magalia	509	Reach File 3			Sacramento
Dark Canyon Creek	SE of Placerville	532	Reach File 3			Delta
Daulton Creek	NE of Madera	539, 545	Basin Plan Map			San Joaquin
Davis Creek	SE of Clearlake	513	Reach File 3			Delta
Davis Flat Creek	W of Red Bluff	524	Reach File 3			Sacramento
Dead Horse Creek	E of Red Bluff	509	Reach File 3			Sacramento
Deadhorse Creek	E of Red Bluff	509	Reach File 3			Sacramento
Deadman Creek	SW of Diamond Springs	532	Reach File 3			Delta
Deadman Creek	S of Merced	535, 538	Reach File 3			San Joaquin
Deep Hole Creek	NE of Redding	508	Reach File 3			Sacramento
Deer Creek	SE of Sacramento area	531, 532	Reach File 3			Delta
Deer Creek	E of Anderson	507	Reach File 3			Sacramento
Deer Creek	W of Red Bluff	524	Reach File 3			Sacramento
Deer Creek	N of Grass Valley	517	Reach File 3		C, S	Sacramento
Deer Creek	N of Chico	504, 509	Reach File 3	x	C, S	Sacramento
Del Puerto Creek	W of Turlock	541, 542	Basin Plan Map	x		San Joaquin

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Del Puerto Creek (North Fork)	N of Patterson	542	Reach File 3			San Joaquin
Diamond Creek	SE of Pollock Pines	532	Reach File 3			Delta
Dibble Creek	NW of Red Bluff	504	Reach File 3		C, S	Sacramento
Dibble Creek (North Fork)	NW of Red Bluff	504	Reach File 3			Sacramento
Dibble Creek (South Fork)	NW of Red Bluff	504	Reach File 3			Sacramento
Dickerson Creek	E of Redding	507	Reach File 3			Sacramento
Dickson Creek	Dixon	511	Basin Plan Map			Delta
Dicus Slough	SE of Corning	504	Reach File 3			Sacramento
Digger Creek	E of Anderson	507	Reach File 3			Sacramento
Digger Creek	W of Corning	504	Reach File 3			Sacramento
Digger Creek (South Fork)	E of Anderson	507	Reach File 3			Sacramento
Ditch Creek	E of Red Bluff	509	Reach File 3			Sacramento
Doby Creek	W of Redding	524	Reach File 3			Sacramento
Dogtown Creek	S of Pollock Pines	532	Reach File 3			Delta
Doty Ravine	N of Lincoln	514, 519	NOAA Data		S	Sacramento
Drumheller Slough	N of Colusa	520	Reach File 3			Sacramento
Dry Arroyo	N of Vacaville	511	Reach File 3			Delta
Dry Creek	E of Clearlake	513	Reach File 3			Delta
Dry Creek	W of Winters	511	Reach File 3			Delta
Dry Creek	E of Durham	520, 521	Basin Plan Map	x		Sacramento
Dry Creek	E of Marysville	515, 517	Reach File 3		C, S	Sacramento
Dry Creek	N of Auburn	514	Reach File 3			Sacramento
Dry Creek	NE of Redding (by Palo Cedro)	507, 508	Reach File 3			Sacramento
Dry Creek	E of Redding	508	Reach File 3			Sacramento
Dry Creek	E of Anderson	508	Reach File 3		C	Sacramento
Dry Creek	W of Anderson	508	Reach File 3			Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Dry Creek	SW of Anderson	508, 524	Reach File 3			Sacramento
Dry Creek	SE of Los Molinos	504	Reach File 3			Sacramento
Dry Creek	NE to SE of Wheatland	515, 516	Reach File 3	x		Sacramento
Dry Creek	NE of Sacramento area	519	Reach File 3	x	S	Sacramento
Dry Creek	E of Turlock	535, 537	Basin Plan Map			San Joaquin
Dry Creek	E of Modesto	535	Reach File 3			San Joaquin
Dry Creek	N of Madero	539, 545	Reach File 3			San Joaquin
Dry Creek (Deadman Fork)	E of Plymouth	532	Reach File 3			Delta
Dry Creek (North Fork)	E of Plymouth	532	Reach File 3			Delta
Dry Creek (North Fork)	E of Warnersville	535, 536	Reach File 3			San Joaquin
Dry Creek (South Fork)	E of Turlock	535, 537	Reach File 3			San Joaquin
Dry Creek (South Fork)	S of Placerville	532	Basin Plan Map			Delta
Dry Slough	W of Davis	511	Basin Plan Map			Delta
Duck Creek	E of Lodi	531	Reach File 3			Delta
Duck Creek	E of Stockton	531	Reach File 3			Delta
Duck Creek (North Fork)	E of Stockton	531	Reach File 3			Delta
Ducket Creek	W of Redding	524	Reach File 3			Sacramento
Duncan Creek	W of Redding	524	Reach File 3			Sacramento
Duncan Creek (Ditch Fork)	SW of Redding	524	Reach File 3			Sacramento
Duncan Creek (East Fork)	W of Redding	524	Reach File 3			Sacramento
Dunn Creek	NE of Turlock	536	Reach File 3			San Joaquin
Dunnigan Creek	N of Dunnigan	520	Reach File 3			Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Durham Slough	SW of Durham	520	Reach File 3			Sacramento
Dutch Henry Creek	W of Willows	520	Reach File 3			Sacramento
Dutchman Creek	N of Chowchilla	535, 538	Reach File 3			San Joaquin
Dye Creek	E of Red Bluff	504, 509	Reach File 3	x	C, S	Sacramento
Dye Creek (Little North Fork)	SE of Red Bluff	509	Reach File 3			Sacramento
Dye Creek (North Fork)	SE of Red Bluff	509	Reach File 3			Sacramento
Eagle Creek	W of Redding	524	Reach File 3			Sacramento
Early Creek	Loma Rica	517	Reach File 3			Sacramento
East Big Canyon Creek	S of Diamond Springs	532	Reach File 3			Delta
East Sulphur Creek	NW of Chester	509	Reach File 3			Sacramento
East Valley Creek	NE of Redding	507, 508	Reach File 3			Sacramento
East Valley Creek	NE of Redding	508	Reach File 3			Sacramento
Edendale Creek	NE of Atwater	535	Reach File 3			San Joaquin
Elder Creek	Southern Sacramento area	519	Reach File 3	x		Delta
Elder Creek	W of Los Molinos	504, 523	Reach File 3		C, S	Sacramento
Elder Creek (North Fork)	W of Los Molinos	523	Reach File 3			Sacramento
Elder Creek (South Fork)	W of Los Molinos	523	Reach File 3			Sacramento
Eldorado Creek	E of Mariposa	538	Reach File 3			San Joaquin
Elk Creek	SW of Arbuckle	520	Reach File 3			Sacramento
Elk Grove Creek	S of Sacramento area	519	Site-Specific Data	x		Delta
Elkhorn Creek	W of Red Bluff	524	Reach File 3			Sacramento
Elmore Creek	W of Corning	504	Reach File 3			Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Encinosa Creek	W of Vacaville	511	Reach File 3			Delta
English Creek	N of Vacaville	511	Reach File 3			Delta
English Creek (South Fork)	N of Vacaville	511	Reach File 3			Delta
Enos Creek	NW of Winters	511	Reach File 3			Delta
Etzel Creek	W of Red Bluff	504	Reach File 3			Sacramento
Fahrens Creek	N of Merced	535	Reach File 3			San Joaquin
Fanny Creek	S of Shingle Springs	532	Reach File 3			Delta
Farnham Creek	E of Plymouth	532	Reach File 3			Delta
Feather River	Marysville & Yuba City	515	Reach File 3	x	C, S	Sacramento
Fiddlers Creek	SW of Redding	524	Reach File 3			Sacramento
Fish Creek	W of Corning	523	Reach File 3		S	Sacramento
Flat Creek	NE of Plymouth	532	Reach File 3			Delta
Flat Creek	W of Redding	508	Reach File 3			Sacramento
Flood Creek	W of Corning	523	Reach File 3			Sacramento
Forked Creek	W of Chester	509	Reach File 3			Sacramento
Frazier Creek	N of Red Bluff	508	Reach File 3			Sacramento
French Creek	S of Shingle Springs	532	Reach File 3			Delta
French Creek	NW of Willows	520	Basin Plan Map			Sacramento
French Creek	E of Redding	508	Reach File 3			Sacramento
Freshwater Creek	N to W of Williams	520	Reach File 3			Sacramento
Fresno River	N of Madera	539, 545	Reach File 3			San Joaquin
Frye Creek	SE of Sacramento area	519	Reach File 3			Delta
Funks Creek	S of Willows	520	Reach File 3			Sacramento
Gallup Creek	N of La Grange	535, 536	Reach File 3			San Joaquin
Garzas Creek	SW of Gustine	541, 542	Reach File 3			San Joaquin
Gilmore Creek	E of Shingle Springs	532	Reach File 3			Delta

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Gilsizer Slough	S of Yuba City	520	Site-Specific Data	x		Sacramento
Gimblin Creek	W of Redding	524	Reach File 3			Sacramento
Glendenning Creek	E of Redding	507	Reach File 3			Sacramento
Glenn Valley Slough	NW of Williams	520	Reach File 3			Sacramento
Golden Gate Creek	E of Plymouth	532	Reach File 3			Delta
Gold Run Creek	N of Oroville	520	Site-Specific Data	x		Sacramento
Goodnow Slough	NW of Woodland	511	Reach File 3			Delta
Gopher Creek	NW of Willows	520	Reach File 3			Sacramento
Grapevine Creek	NW of Williams	520	Reach File 3			Sacramento
Grass Valley Creek	NE of Jackson	532	Reach File 3			Delta
Griffin Creek	W of Corning	523	Reach File 3			Sacramento
Griffith Creek	NE of Galt	531	Reach File 3			Delta
Grizzly Creek	NE of Clearlake	513	Reach File 3			Delta
Grizzly Gulch	S of Placerville	532	Reach File 3			Delta
Grub Creek	W of Grass Valley	517	Reach File 3			Sacramento
Grummett Creek	NW of Patterson	542	Reach File 3			San Joaquin
Gunbarrel Creek	E of Red Bluff	509	Reach File 3			Sacramento
Gurnsey Creek	W of Chester	509	Basin Plan Map			Sacramento
Guyre Creek	W of Red Bluff	508	Reach File 3			Sacramento
Guyre Creek (Middle Fork)	W of Red Bluff	508	Reach File 3			Sacramento
Hadselville Creek	SE of Wilton	531	Reach File 3			Delta
Hall Creek	SW of Corning	504	Reach File 3			Sacramento
Hall Creek (Middle Fork)	SW of Corning	504	Reach File 3			Sacramento
Hall Creek (North Fork)	SW of Corning	504	Reach File 3			Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Hall Creek (South Fork)	SW of Corning	504	Reach File 3			Sacramento
Hamlin Slough	S of Chico	520	Reach File 3			Sacramento
Hamp Creek	E of Redding	507	Reach File 3			Sacramento
Harbean Slough	N of Hamilton City	504	Reach File 3			Sacramento
Harley Gulch	E of Clearlake	513	Reach File 3			Delta
Harris Creek	S of Clearlake	513	Reach File 3			Delta
Hartley Slough	S of Merced	535	Reach File 3			San Joaquin
Hartman Creek	E of Gustine	542	Reach File 3			San Joaquin
Harvey Creek	W of Red Bluff	524	Reach File 3			Sacramento
Hass Slough	E of Vacaville	510, 511	Reach File 3			Delta
Haw Creek	N of Magalia	521	Reach File 3			Sacramento
Hayes Hollow Creek	NW of Willows	520	Reach File 3			Sacramento
Haypatch Creek	W of Corning	523	Reach File 3			Sacramento
Hazel Creek	E of Pollock Pines	532	Reach File 3			Delta
Hensley Creek	W of Red Bluff	524	Reach File 3			Sacramento
Hensley Creek (North Fork)	W of Red Bluff	524	Reach File 3			Sacramento
Hensley Creek (South Fork)	W of Red Bluff	524	Reach File 3			Sacramento
Herndon Creek	S of Clearlake	513	Reach File 3			Delta
Hidden Creek	W of Los Banos and San Luis Reservoir	542	Reach File 3			San Joaquin
Hoag Slough	Near Vina	504	Reach File 3			Sacramento
Hog Hollow Creek	NE of Clearlake	513	Reach File 3			Delta
Honcut Creek	E of Live Oak	515	Reach File 3			Sacramento
Honcut Creek (North)	E of Live Oak	515, 517, 519	Reach File 3			Sacramento
Honcut Creek (South)	E of Live Oak	515, 517	Reach File 3	x		Sacramento
Honey Run	W and in Paradise	521	Reach File 3			Sacramento
Hoods Creek	E of Stockton	531	Reach File 3			Delta

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Hooker Creek	NW of Red Bluff	508	Reach File 3			Sacramento
Hornitos Creek	E of Mariposa	538	Reach File 3			San Joaquin
Horse Trough Creek	W of Corning	523	Reach File 3			Sacramento
Hospital Creek	W of Modesto	541, 542	Basin Plan Map			San Joaquin
Houghton Creek	W of Corning	504	Reach File 3			Sacramento
Humbug Creek	Folsom area	519	Reach File 3			Sacramento
Hunt Creek	S of Burney	507	Reach File 3			Sacramento
Hunters Creek	S of Willows	520	Reach File 3			Sacramento
Hutchinson Creek	SE of Marysville	515, 516	Reach File 3			Sacramento
Indian Creek	NE of Stockton	531, 533	Reach File 3			Delta
Indian Creek	NE of Clearlake	513	Reach File 3			Delta
Indian Creek	E of Rancho Murieta	532	Reach File 3			Delta
Indian Creek	NE of Plymouth	532	Reach File 3			Delta
Indian Creek	E of Red Bluff	509	Reach File 3			Sacramento
Indian Springs Creek	S of Penn Valley	516	Reach File 3			Sacramento
Ingalsbe Slough	SE of Turlock	535	Reach File 3	x		San Joaquin
Ingram Creek	W of Modesto	541, 542	Basin Plan Map	x		San Joaquin
Inks Creek	SE of Cottonwood	507	Basin Plan Map		C, S	Sacramento
Inskip Creek	N of Magalia	521	Reach File 3			Sacramento
Jack Slough	NE of Marysville	515	Reach File 3	x		Sacramento
Jackson Creek	Jackson	531, 532	Reach File 3			Delta
Jackson Creek (North Fork)	Northern Jackson	532	Reach File 3			Delta
Jackson Creek (South Fork)	E of Jackson	532	Reach File 3			Delta
Jenny Creek	Redding	508	Reach File 3		S	Sacramento
Jerusalem Creek	W of Redding	524	Reach File 3			Sacramento
Jewett Creek	Corning	504	Reach File 3		C	Sacramento
Kanaka Creek	W of Redding	524	Reach File 3			Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Kanaka Creek	N of Paradise	521	Reach File 3			Sacramento
Kaseberg Creek	Roseville area	519	Reach File 3			Sacramento
Keefer Slough	N of Chico	504	Reach File 3			Sacramento
Kopta Slough	E of Corning	504	Reach File 3			Sacramento
Kusal Slough	W of Chico	504	Reach File 3		C	Sacramento
Laguna	S of Sacramento area	531	Reach File 3			Delta
Laguna Creek	E of Sacramento area	519	Reach File 3			Delta
Last Chance Creek	SW of Red Bluff	504	Reach File 3			Sacramento
Latrobe Creek	E of Sacramento area	532	Reach File 3			Delta
Linda Creek	NE Sacramento area	519	Reach File 3	x		Sacramento
Little Antelope Creek	E of Red Bluff	504, 509	Basin Plan Map			Sacramento
Little Basin Creek	SW of Red Bluff	523	Reach File 3			Sacramento
Little Buckeye Creek	NW of Dunnigan	520	Reach File 3			Sacramento
Little Butte Creek	N of Paradise	521	Reach File 3	x	S	Sacramento
Little Butte Creek	S of Chico	520	Reach File 3			Sacramento
Little Chico Creek	NE to S Chico area	504, 509, 520, 521	Reach File 3		S	Sacramento
Little Churn Creek	N of Redding	508, 524	Reach File 3			Sacramento
Little Cottonwood Creek	NW of Oroville	520	Reach File 3			Sacramento
Little Cow Creek	E of Redding	507, 508	Reach File 3	x	C	Sacramento
Little Cow Creek (North Fork)	SW of Burney	507	Reach File 3			Sacramento
Little Crane Creek	NW of Red Bluff	508	Reach File 3			Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Little Deer Creek	E of Nevada City	517	Reach File 3			Sacramento
Little Dry Creek	E of Beale Air Force Base	516	Reach File 3			Sacramento
Little Dry Creek	E of Los Molinos	509	Reach File 3			Sacramento
Little Dry Creek	SW of Anderson	508	Reach File 3			Sacramento
Little Dry Creek	S of Chico	520, 521	Reach File 3		S	Sacramento
Little Dry Creek	N of Fresno	545	Basin Plan Map			Sacramento
Little Grapevine Creek	E of Red Bluff	509	Reach File 3			Sacramento
Little Indian Creek	NE of Rancho Murieta (N of Consumnes River)	532	Reach File 3			Delta
Little Indian Creek	SE of Rancho Murieta (S of Consumnes River)	532	Reach File 3			Delta
Little Mill Creek	SE of Red Bluff	509	Reach File 3			Sacramento
Little Mill Creek (North Fork)	NE of Los Molinos	509	Reach File 3			Sacramento
Little Mill Creek (South Fork)	SE of Red Bluff	509	Reach File 3			Sacramento
Little Panoche Creek	W of Mendota Near Little Panoche Reservoir	541	Reach File 3			San Joaquin
Little Panoche Creek (South Fork)	W of Mendota	541	Reach File 3			San Joaquin
Little Pine Creek	N of Chico	509	Reach File 3			Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Little Red Mountain Creek	S of Hayfork	524	Reach File 3			Sacramento
Little Salt Creek	SE of Hayfork	524	Reach File 3			Sacramento
Little Salt Creek	E of Red Bluff	504	Reach File 3			Sacramento
Little Smoky Creek	N of Magalia	509	Reach File 3			Sacramento
Littlejohns Creek	SE of Stockton	531, 534, 535	Reach File 3	x		Delta, San Joaquin
Liza Creek	W of Red Bluff	504	Reach File 3			Sacramento
Log Spring Creek	W of Corning	523	Reach File 3			Sacramento
Logan Creek	N of Williams	520	Reach File 3			Sacramento
Lone Tree Creek	SE of Stockton	531, 535	Reach File 3	x		Delta
Lone Tree Creek (Middle Fork)	S of Tracy	542	Reach File 3			Delta
Lone Tree Creek (North Fork)	S of Tracy	542	Reach File 3			Delta
Lone Willow Slough	W of Madera	545	Basin Plan Map			San Joaquin
Long Gulch	SE of Red Bluff	504, 509	Reach File 3			Sacramento
Long Valley Creek	N of Clearlake	513	Reach File 3			Delta
Long Valley Creek (South Fork)	E of Lucerne	513	Reach File 3			Delta
Los Banos Creek	N to SW of Los Banos	541, 542	Reach File 3	x		San Joaquin
Los Banos Creek (North Fork)	SW of Los Banos	542	Reach File 3			San Joaquin
Los Banos Creek (South Fork)	SW of Los Banos	542	Reach File 3			San Joaquin

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Lost Creek	W of Chester	509	Basin Plan Map			Sacramento
Lotta Creek	SE of Patterson	542	Reach File 3			San Joaquin
Lower Dominici Creek	W of La Grange	535	Reach File 3			San Joaquin
Lower Rocky Honcut Creek	E of Oroville	517	Reach File 3			Sacramento
Lurline Creek	N of Williams	520	Basin Plan Map			Sacramento
Magpie Creek	N Sacramento area	519	Reach File 3			Sacramento
Manzanita Creek	E of Redding	507	Basin Plan Map			Sacramento
Manzanita Creek	W of Arbuckle	520	Reach File 3			Sacramento
Maple Creek	W of Red Bluff	524	Reach File 3			Sacramento
Mariposa Creek	N of La Grand	535, 538	Reach File 3			San Joaquin
Mariposa Slough	SW of Merced	535	Reach File 3			San Joaquin
Martells Creek	E of Stockton	531	Reach File 3			Delta
Martin Creek	W of Chester	507	Reach File 3			Sacramento
Martinez Creek	S of Placerville	532	Reach File 3			Delta
McCarty Creek	E of Red Bluff	509	Reach File 3			Sacramento
McCarty Creek	W of Corning	504	Reach File 3			Sacramento
McCarty Creek	W of Sonora	531	Reach File 3			Delta
McClure Creek	W of Corning	523	Reach File 3			Sacramento
McClure Creek	W of Tehama	504	NOAA Data		C, S	Sacramento
McCune Creek	N of Vacaville	511	Reach File 3			Delta
McDonald Creek	S of La Grange	536	Reach File 3			San Joaquin
McGinn Creek	Loma Rica	517	Reach File 3			Sacramento
McKinney Creek	SE of Pollock Pines	532	Reach File 3			Delta
Mehrten Creek	SE of Pollock Pines	532	Reach File 3			Delta
Merced River	N of Merced	535, 537	Reach File 3	x	S	San Joaquin
Middle Butte Creek	In Magalia	521	Reach File 3			Sacramento
Middle Creek	W of Redding	508	Reach File 3		S	Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Middle Dry Creek	SE of Pollock Pines	532	Reach File 3			Delta
Middle Paddy Creek	E of Lodi	531	Reach File 3			Delta
Mill Creek	W of Williams	513	Reach File 3			Delta
Mill Creek	W of Corning	523	Reach File 3			Sacramento
Mill Creek	NE of Redding	507	Reach File 3			Sacramento
Mill Creek	E of Redding	507	Reach File 3			Sacramento
Mill Creek	NE of Los Molinos	504, 509	Reach File 3	x	C, S	Sacramento
Mill Creek	NW of Corning	504	Reach File 3			Sacramento
Mill Creek (Middle Fork)	NW of Williams	513	Reach File 3			Delta
Mill Creek (North Fork)	N of Los Molinos	504	Reach File 3			Sacramento
Mill Creek (South Fork)	NW of Williams	513	Reach File 3			Delta
Millrace Creek	E of Red Bluff	504	Reach File 3			Sacramento
Mills Creek	S of Placerville	532	Reach File 3			Delta
Millseat Creek	W of Anderson	507	Reach File 3		S	Sacramento
Mine Creek	SW of Los Banos	542	Basin Plan Map			San Joaquin
Miner Creek	SW of Dos Palos	541, 542	Reach File 3			San Joaquin
Miners Ravine	Loomis area	519	NOAA Data	x	S	Sacramento
Minton Creek	SW of Willows	520	Reach File 3			Sacramento
Misery Creek	E of Amador City	532	Reach File 3			Delta
Molesworth Creek	Clearlake	513	Reach File 3			Delta
Moody Creek	N of Redding	506, 508	Reach File 3			Sacramento
Morgan Creek	W of Anderson	507	Reach File 3		S	Sacramento
Morrison Creek	S of Gridley	520	Basin Plan Map			Sacramento
Mosquito Creek	N of Magalia	521	Reach File 3			Sacramento
Mosquito Creek	E of Nevada City	517	Reach File 3			Sacramento
Mud Creek	N of Chico	504, 509	Reach File 3		C, S	Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Mud Creek (East Branch)	N of Chico	509	Reach File 3			Sacramento
Mud Slough (north)	E of Gustine	541	Site-Specific Data	x		San Joaquin
Mud Slough	NW of Dos Palos	541	Reach File 3			San Joaquin
Murphy Slough	SW of Chico	504	Reach File 3			Sacramento
Nelson Creek	N of Redding	508	Reach File 3			Sacramento
Nevada Creek	W of Corning	504	Reach File 3			Sacramento
New Creek	E of Red Bluff	504	Reach File 3	x	C, S	Sacramento
Newtown Creek	N of Redding	508	Reach File 3			Sacramento
Ninemile Creek	E of Los Molinos	509	Reach File 3			Sacramento
North Park Creek	E of Pollock Pines	532	Reach File 3			Delta
North Steely Creek	SE of Pollock Pines	532	Reach File 3			Delta
Nye Creek	NW of Willows	520	Reach File 3			Sacramento
Oak Creek	NE of Red Bluff	509	Reach File 3			Sacramento
Oak Flat Creek	W of Cottonwood	524	Reach File 3			Sacramento
Oak Run Creek	E of Redding	507, 508	Basin Plan Map	x	S	Sacramento
Oat Creek	E of Redding	508	Reach File 3			Sacramento
Oat Creek	S of Red Bluff	504	Reach File 3		C, S	Sacramento
Oat Creek	NW of Woodland	520	Reach File 3			Sacramento
Oat Creek (South Fork)	NW of Woodland	520	Reach File 3			Sacramento
Old Cow Creek	E of Redding	507, 508	Basin Plan Map	x	S	Sacramento
Old Man Springs Creek	NW of Red Bluff	524	Reach File 3			Sacramento
Oliphant Creek	S of Hayfork	524	Reach File 3			Sacramento
Olney Creek	W of Redding	508	Reach File 3		C, S	Sacramento
On It Creek	S of Pollock Pines	532	Reach File 3			Delta
Oneida Creek	N of Jackson	532	Reach File 3			Delta
Onion Creek	E of Anderson	507	Reach File 3			Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Orchard Creek	NE of Sacramento area	519	Reach File 3			Sacramento
Oregon Gulch	S of Pollock Pines	532	Reach File 3			Delta
Oregon Gulch	S of Redding	508	NOAA Data		S	Sacramento
Orestimba Creek	N & W of Newman	541, 542	Reach File 3	x		San Joaquin
Orestimba Creek (North Fork)	W of Newman	542	Reach File 3			San Joaquin
Orestimba Creek (South Fork)	SW of Newman	542	Reach File 3			San Joaquin
Ortigalita Creek	SW of Los Banos	541, 542	Reach File 3			San Joaquin
Owens Creek	SE to SW of Merced	535, 538	Reach File 3			San Joaquin
Owl Creek	NE of Oakdale	534, 536	Reach File 3			San Joaquin
Paddy Creek	E of Lodi	531	Reach File 3			Delta
Paige Soube	W of Redding	524	Reach File 3			Sacramento
Panther Creek	E of Red Bluff	509	Reach File 3		S	Sacramento
Panther Creek	E of Cottonwood	507	Reach File 3			Sacramento
Parker Creek	W of Corning	504	Reach File 3			Sacramento
Patterson Run	W of Tracy	543	Reach File 3			Delta
Paynes Creek	NE of Red Bluff	507, 508, 509	Reach File 3		C, S	Sacramento
Pegleg Creek	SW of Tracy	504, 502	Reach File 3			Delta
Perini Creek	S of Clearlake	513	Reach File 3			Delta
Perkins Creek	E of Clearlake	513	Reach File 3			Delta
Perry Creek	SE of Placerville	532	Reach File 3			Delta
Piedra Azul Creek	SW of Dos Palos	541, 542	Reach File 3			San Joaquin
Pigpen Creek	W of Red Bluff	504	Reach File 3			Sacramento
Pine Creek	NW of Red Bluff	508	Reach File 3			Sacramento
Pine Creek	W of Red Bluff	504, 508	Reach File 3			Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Pine Creek	N of Chico	504, 509	Reach File 3		C	Sacramento
Ping Slough	NW of Lincoln	515, 519	Reach File 3			Sacramento
Pinto Creek	W of Newman	542	Reach File 3			San Joaquin
Pioneer Creek	NE of Jackson	532	Reach File 3			Delta
Pleasant Creek	N of Vacaville	511	Reach File 3			Delta
Pleasant Grove Creek	N of Sacramento area	519	Reach File 3	x		Sacramento
Pleasants Creek	NW of Vacaville	511	Reach File 3			Delta
Plum Creek (North Fork)	NE of Red Bluff	509	Reach File 3			Sacramento
Plunkett Creek	E of Sacramento area	532	Reach File 3			Delta
Pole Corral Creek	S of Hayfork	524	Reach File 3			Sacramento
Portuguese Creek	W of Los Banos and San Luis Reservoir	542	Reach File 3			San Joaquin
Post Creek	W of Red Bluff	524	Reach File 3			Sacramento
Prairie Creek	Loma Rica	515, 517	Reach File 3			Sacramento
Prospect Creek	SE of Pollock Pines	532	Reach File 3			Delta
Prothro Creek	SE of Pollock Pines	532	Reach File 3			Delta
Putah Creek	W of Sacramento	511	Reach File 3	x	S	Delta
Quinto Creek	W of Gustine	541, 542	Reach File 3			San Joaquin
Rafter Gulch	W of Redding	524	Reach File 3			Sacramento
Rancheria Creek	S of Placerville	532	Reach File 3			Delta
Rancheria Creek	N of Redding	508	Reach File 3			Sacramento
Rancheria Creek	E of Anderson	507	Reach File 3			Sacramento
Rancheria Creek	E of Red Bluff	509	Reach File 3			Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Rancheria Creek (North Fork)	E of Plymouth	532	Reach File 3			Delta
Rattlesnake Creek	SW of Chester	509	Reach File 3			Sacramento
Rattlesnake Creek	E of Vina	504, 509	Reach File 3			Sacramento
Raynor Creek	NW of Yosemite Lakes	538, 539	Reach File 3			San Joaquin
Rector Creek	W of Redding	524	Reach File 3			Sacramento
Red Bank Creek	SW of Red Bluff	504, 523	Reach File 3		C, S	Sacramento
Red Bank Creek (North Fork)	W of Red Bluff	504, 523	Reach File 3			Sacramento
Red Creek	W of Newman	542	Reach File 3			San Joaquin
Reeds Creek	W of Red Bluff	504	Reach File 3		C	Sacramento
Reeds Creek	SE of Marysville	515	Reach File 3			Sacramento
Rice Creek	S of Corning	504	Reach File 3		C, S	Sacramento
Rincon Creek	W of Dos Palos	542	Reach File 3			San Joaquin
Ripley Creek	E of Cottonwood	507	Reach File 3		S	Sacramento
Roaring River	W of Anderson	508	Reach File 3			Sacramento
Robinson Creek	W of Newman	542	Reach File 3			San Joaquin
Rock Creek	W of Jackson	532	Reach File 3			Delta
Rock Creek	E of Stockton	531	Reach File 3			Delta
Rock Creek	Northern Auburn	514	Reach File 3	x		Sacramento
Rock Creek	NW of Redding	524	Reach File 3		S	Sacramento
Rock Creek	E of Anderson	507	Reach File 3			Sacramento
Rock Creek	N of Chico	504, 509	Reach File 3		C, S	Sacramento
Rock Creek (West Fork)	N of Chico	509	Reach File 3			Sacramento
Rocky Creek	E of Clearlake	513	Reach File 3			Delta
Rocky Creek	SW of Redding	524	Reach File 3			Sacramento
Rocky Creek	W of Sonora	531	Reach File 3			Delta
Rocky Gulch Creek	E of Red Bluff	509	NOAA Data		S	Sacramento
Romero Creek	NW of Los Banos	541, 542	Reach File 3			San Joaquin

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Round Mountain Creek	E of Red Bluff	509	Reach File 3			Sacramento
Sacramento Slough	NW of Sacramento area	520	Reach File 3	x	C, S	Sacramento
Salado Creek	SW of Patterson	541, 542	Basin Plan Map			San Joaquin
Salmon Creek	E of Redding	508	Reach File 3			Sacramento
Salt Creek	W of Davis, S of other Salt Creek	511	Basin Plan Map			Delta
Salt Creek	W of Woodland	511	Reach File 3			Delta
Salt Creek	NE of Redding	506, 507, 508	Reach File 3			Sacramento
Salt Creek	Northern Redding	508	Reach File 3			Sacramento
Salt Creek	Western Redding	508	Reach File 3		S	Sacramento
Salt Creek	NW of Red Bluff	508, 524	Reach File 3			Sacramento
Salt Creek	E of Red Bluff	504, 509	Reach File 3		C, S	Sacramento
Salt Creek	W of Williams	520	Reach File 3	x		Sacramento
Salt Creek	NE to SW of Arbuckle	520	Reach File 3			Sacramento
Salt Gulch Creek	NW of Willows	520	Reach File 3			Sacramento
Salt Rock Creek	SE of Pollock Pines	532	Reach File 3			Delta
Salt Slough	E of Gustine	541	Reach File 3	x		San Joaquin
San Luis Creek	W of San Luis Reservoir	542	Basin Plan Map			San Joaquin
Sand Creek	NE to W of Arbuckle	520	Reach File 3			Sacramento
Sand Creek (North Branch)	NW of Arbuckle	520	Reach File 3			Sacramento
Sand Creek (South Branch)	W of Arbuckle	520	Reach File 3			Sacramento
Sand Slough	SW of Merced	535	Reach File 3			San Joaquin

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Sawmill Creek	E of Shingle Springs	532	Reach File 3			Delta
Scott Creek	S of Placerville	532	Reach File 3			Delta
Scotts John Creek	NE of Magalia	521	Reach File 3			Sacramento
Secret Ravine	Rocklin area	519	NOAA Data	x	S	Sacramento
Sehorn Creek	SW of Corning	504	Reach File 3			Sacramento
Seigler Canyon Creek	SW of and within Lower Lake	513	Reach File 3			Delta
Sevenmile Creek	NE of Red Bluff	504	Reach File 3			Sacramento
Shaw Creek	E of Red Bluff	509	Reach File 3			Sacramento
Sheep Hollow	N of Chico	504, 509	Reach File 3			Sacramento
Sheep Thief Creek	W of Newman	542	Reach File 3			San Joaquin
Sheridan Creek	E of Redding	507	Reach File 3			Sacramento
Shingle Creek	S of Shingle Springs	532	Reach File 3			Delta
Shingle Creek	E of Redding	507	Reach File 3			Sacramento
Shingle Mill Creek	SE of Pollock Pines	532	Reach File 3			Delta
Shirley Creek	E of Stockton	531	Reach File 3			Delta
Simmerly Slough	N of Marysville	515	Reach File 3			Sacramento
Simmons Creek	E of Stockton	531, 535	Reach File 3			Delta
Singer Creek	E of Corning	504, 509	Basin Plan Map		C	Sacramento
Singer Creek (North Fork)	E of Los Molinos	509	Reach File 3			Sacramento
Skunk Creek	N of Galt	531	Reach File 3			Delta
Slate Creek	SE of Shingle Springs	532	Reach File 3			Delta
Slate Creek	E of Plymouth	532	Reach File 3			Delta
Slate Creek	Northern Grass Valley	517	Reach File 3			Sacramento
Slate Creek	W of Corning	523	Reach File 3			Sacramento
Slate Creek	W of Chester	509	Reach File 3			Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Slaughter Pole Creek	E of Redding	507	Reach File 3			Sacramento
Slide Creek	W of Red Bluff	524	Reach File 3			Sacramento
Slides Creek	W of Red Bluff	524	Reach File 3			Sacramento
Sly Park Creek	S of Pollock Pines	532	Reach File 3			Delta
Smith Creek	E of Stockton	531	Reach File 3			Delta
Smith Creek	S of Zamora	520	Reach File 3			Sacramento
Snake Creek	W of Los Molinos	523	Reach File 3			Sacramento
Snake River	W of Yuba City	520	Basin Plan Map			Sacramento
Snow Creek	SE of Pollock Pines	532	Reach File 3			Delta
Snow Creek	E of Redding	507	Reach File 3			Sacramento
Soap Creek	NE of Red Bluff	507	NOAA Data		S	Sacramento
Sopiago Creek	S of Pollock Pines	532	Reach File 3			Delta
Sour Grass Creek	S of Corning	504	Reach File 3			Sacramento
South Gulch	E of Stockton	531	Reach File 3			Delta
South Steely Creek	SE of Pollock Pines	532	Reach File 3			Delta
Spanish Creek	S of Placerville	532	Reach File 3			Delta
Spanish Creek (North Fork)	SE of Placerville	532	Reach File 3			Delta
Spanish Creek (South Fork)	SE of Placerville	532	Reach File 3			Delta
Spicer Creek	W of Los Banos and San Luis Reservoir	542	Reach File 3			San Joaquin
Spring Branch	E of Cottonwood	507	Reach File 3			Sacramento
Spring Branch	N of Redding	506, 508	Reach File 3			Sacramento
Spring Creek	E of Cottonwood	507	Reach File 3			Sacramento
Spring Creek	E of Anderson	507	Reach File 3			Sacramento
Spring Creek	SW of Williams	520	Reach File 3	x		Sacramento
Spring Creek	N of Red Bluff	508	Reach File 3			Sacramento
Spring Valley Creek	E of Lodi	531	Reach File 3			Delta

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Squaw Creek	W of Anderson	508	Reach File 3			Sacramento
Squaw Hollow Creek	S of Placerville	532	Reach File 3			Delta
Squaw Hollow Creek	NW of Red Bluff	524	Reach File 3			Sacramento
Squirrel Creek	Northern Penn Valley	517	Reach File 3			Sacramento
Stafford Creek	SE of Shingle Springs	532	Reach File 3			Delta
Stanislaus River	N of Modesto	534, 535	Reach File 3	x	S	San Joaquin
Stillwater Creek	E of Redding	508	Reach File 3		C, S	Sacramento
Stillwater Creek (West Fork)	NE of Redding	508	Reach File 3			Sacramento
Stinking Creek	W of Red Bluff	524	Reach File 3			Sacramento
Stone Corral Creek	N of Williams	520	Reach File 3	x		Sacramento
Stonebreaker Creek	SE of Pollock Pines	532	Reach File 3			Delta
Stoney Creek	SE of Placerville	532	Reach File 3			Delta
Stony Creek	S of Corning	504	Reach File 3		C, S	Sacramento
Strap Miner Creek	S of Cameron Park	532	Reach File 3			Delta
Strawberry Creek	S of Sacramento area	519	Reach File 3			Delta
Strong Ranch Slough	Sacramento area	519	Reach File 3			Sacramento
Sugarfoot Creek	W of Corning	523	Reach File 3			Sacramento
Sulphur Creek	N of Chico	509	Reach File 3			Sacramento
Sulphur Creek	SW of Red Bluff	524	Reach File 3			Sacramento
Sulphur Creek	Redding area	508	Reach File 3		S	Sacramento
Sulphur Creek (East Fork)	SE of Williams	513	Reach File 3			Delta
Sulphur Creek (West Branch)	NE of Clearlake	513	Reach File 3			Delta
Sutter Creek	W and though lone	531, 532	Reach File 3			Delta

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Sutter Creek (South Branch)	NE of Jackson	532	Reach File 3			Delta
Swamp Creek	W of Chester	509	Reach File 3			Sacramento
Swede Creek	E of Redding	508	Reach File 3			Sacramento
Sweet Hollow Creek	N of Clearlake	513	Reach File 3			Delta
Sweet Springs Creek	S of Clearlake	513	Reach File 3			Delta
Sycamore Creek	S of Antioch	543	Reach File 3			Delta
Sycamore Creek	N Chico area	504, 509	Reach File 3			Sacramento
Tadpole Creek	W of Redding	508	Reach File 3			Sacramento
Telegraph Creek	E of Stockton	531	Reach File 3			Delta
Tennessee Creek	S of Pollock Pines	532	Reach File 3			Delta
Tennessee Creek	Loma Rica	517	Reach File 3			Sacramento
Thomes Creek	W of Corning	504, 523	Reach File 3		C, S	Sacramento
Toomes Creek	S of Los Molinos	504, 509	Reach File 3	x	C	Sacramento
Trout Creek	E of Clearlake	513	Reach File 3			Delta
Trout Creek	W of Williams	513	Reach File 3			Delta
Truckee Creek	W of Tehama	504	Reach File 3			Sacramento
Tuolumne River	SE and SW of Modesto	535, 536	Reach File 3	x	S	San Joaquin
Union School Slough	N of Winters	511	Site-Specific Data	x		Delta
Upper Rocky Honcut Creek	E of Oroville	517	Reach File 3			Sacramento
Van Horn Creek	SE of Pollock Pines	532	Reach File 3			Delta
Varey Creek	N of Magalia	521	Reach File 3			Sacramento
Vasque Creek	W of Mendota	541, 542	Basin Plan Map			San Joaquin
Vizard Creek	SE of La Grange	535, 536, 537	Reach File 3			San Joaquin

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Walker Creek (South Fork)	W of Orland	504	Reach File 3			Sacramento
Walters Creek	SW of Williams	520	Reach File 3			Sacramento
Weemasoul Creek	W of Red Bluff	524	Reach File 3			Sacramento
Wells Creek	W of Red Bluff	524	Reach File 3			Sacramento
West Hunt Creek	E of Redding	507	Reach File 3			Sacramento
West Sulphur Creek	NW of Chester	509	Reach File 3			Sacramento
Whiskey Creek	W of Arbuckle	520	Reach File 3			Sacramento
Whisky Creek	W of Yosemite Lakes	539	Reach File 3			San Joaquin
White Cabin Creek	SW of Orland	520	Reach File 3			Sacramento
Wildcat Creek	E of Los Molinos	509	Reach File 3			Sacramento
Wildcat Creek	E of Redding	507	Reach File 3			Sacramento
Wildcat Creek	E of Oakdale	535	Reach File 3			San Joaquin
Wildcat Creek	W of Yosemite Lakes	539	Reach File 3			San Joaquin
Wildcat Creek	W of Dunnigan	520	Reach File 3			Sacramento
Wildcat Creek	S of Patterson	542	Reach File 3			San Joaquin
Willow Creek	N of Lone	531, 532	Reach File 3			Delta
Willow Creek	W of Corning	523	Reach File 3		S	Sacramento
Willow Creek	W of Red Bluff	524	Reach File 3			Sacramento
Willow Creek	S of Red Bluff	504	Reach File 3		S	Sacramento
Willow Creek	SE of Willows	520	Reach File 3			Sacramento
Willow Creek	W of Yosemite Lakes	539	Reach File 3			San Joaquin
Willow Creek	E of Sacramento area	519	Reach File 3			Sacramento
Willow Creek	NE of Paradise	521	Reach File 3			Sacramento
Willow Slough	W of Sacramento	511	Basin Plan Map	x		Delta
Willow Valley Creek	E of Nevada City	517	Reach File 3			Sacramento
Wilson Creek	W of Orland	504, 520	Basin Plan Map			Sacramento
Wilson Creek	W of Redding	524	Reach File 3			Sacramento

Table 1 – Named Water Bodies in the Reach File 3 Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Stream Name	Location	Hydrologic Unit	Location of Original	Site Specific Data	Distribution Data	Subarea
Wolf Creek	N of Clearlake	513	Reach File 3			Delta
Wolf Creek (North Fork)	E of Lucerne	513	Reach File 3			Delta
Wolf Creek (South Fork)	E of Lucerne	513	Reach File 3			Delta
Woodman Creek	E of Redding	507	Reach File 3			Sacramento
Wyandotte Creek	S of Oroville	515	Reach File 3			Sacramento
Wyman Ravine	S of Oroville	515	Basin Plan Map			Sacramento
Yank Creek	NE of Redding	507, 508	Reach File 3			Sacramento
Yankee Slough	S of Wheatland	515	Reach File 3			Sacramento
Yuba River	NE of Marysville	515, 517	Reach File 3	x	C, S	Sacramento
Zamora Creek	SW of Zamora	520	Reach File 3			Sacramento
Zimmershed Creek	N of Chico	504, 509	Reach File 3			Sacramento

Table 2 – Site-Specific Data Point Locations Within the Central Valley Pesticide Basin Plan Amendment Project Area

* Site names have been left as listed from either the report or direct from the author(s).

* Study numbers correspond to Table 4

Data Type	Water body	Site Name	Latitude	Longitude	Study
Macroinvertebrate	Lone Tree Creek	Lone Tree Creek @ Escalon-Belota Road	37.8224	-120.9977	1
Macroinvertebrate	Lone Tree Creek	Lone Tree Creek @ Lone Tree Road	37.8272	-121.0805	1
Macroinvertebrate	Littlejohns Creek	Littlejohns Creek @ Austin Road	37.8861	-121.1826	1
Macroinvertebrate	Littlejohns Creek	Littlejohns Creek @ Stanley Road	37.9203	-121.0268	1
Macroinvertebrate	Elder Creek	Elder Creek @ Elk Grove-Florin Road	38.4840	-121.3710	1
Macroinvertebrate	Elder Creek	Elder Creek @ Bradshaw Road	38.5072	-121.3335	1
Macroinvertebrate	Elk Grove Creek	Elk Grove Creek @ Emerald Vista Drive	38.4110	-121.3832	1
Macroinvertebrate	Elk Grove Creek	Elk Grove Creek @ Elk Grove-Florin Road	38.4033	-121.3706	1
Macroinvertebrate	American River	AMERICAN R A SACRAMENTO CA	38.5681	-121.4222	2
Macroinvertebrate	Arcade Creek	ARCADE C NR DEL PASO HEIGHTS CA	38.6419	-121.3817	2
Macroinvertebrate	Big Chico Creek	BIG CHICO C A CHICO CA	39.7272	-121.8622	2
Macroinvertebrate	Big Chico Creek	BIG CHICO C A SODA SPRGS CMPGRND	40.0878	-121.5844	2
Macroinvertebrate	Big Chico Creek	BIG CHICO C A UPPER PARK GOLF COU	39.7669	-121.7783	2
Macroinvertebrate	Big Chico Creek	BIG CHICO C NR FOREST RANCH CA	39.8933	-121.6922	2
Macroinvertebrate	Butte Creek	BUTTE C A BIGGS PRINCETON RD NR A	39.4200	-121.8800	2
Macroinvertebrate	Butte Creek	BUTTE C A CHERRY HILL CAMPGROUND	40.1025	-121.4964	2
Macroinvertebrate	Butte Creek	BUTTE C A DOE MILL RD NR STIRLING	39.9089	-121.6169	2
Macroinvertebrate	Butte Creek	BUTTE C A DURNEL RD NR NELSON CA	39.5842	-121.7989	2
Macroinvertebrate	Butte Creek	BUTTE C A HONEY RUN RD NR PARADIS	39.7289	-121.7025	2
Macroinvertebrate	Butte Creek	BUTTE C A LAUX RD NR MERIDIAN CA	39.2406	-121.9472	2
Macroinvertebrate	Cache Creek	CACHE C A GUINDA CA	38.8283	-122.1822	2

Table 2 – Site-Specific Data Point Locations Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Data Type	Water body	Site Name	Latitude	Longitude	Study
Macroinvertebrate	Colusa Basin Drain	COLUSA BASIN DR A RD 99E NR KNIGH	38.8125	-121.7731	2
Macroinvertebrate	Deer Creek	DEER C A COHASSET RIDGE RD NR CAM	40.0706	-121.7036	2
Macroinvertebrate	Deer Creek	DEER C A POTATO PATCH CMPGRND NR	40.1878	-121.5311	2
Macroinvertebrate	Deer Creek	DEER C BL SP RR BRIDGE NR VINA CA	39.9408	-122.0636	2
Macroinvertebrate	Deer Creek	DEER C NR VINA CA	40.0141	-121.9472	2
Macroinvertebrate	Feather River	FEATHER R NR NICOLAUS	38.8906	-121.6033	2
Macroinvertebrate	Merced River	MERCED R A HAGAMAN CTY PARK NR IR	37.3683	-120.8464	2
Macroinvertebrate	Merced River	MERCED R A MCCONNELL STATE PARK N	37.4139	-120.7092	2
Macroinvertebrate	Merced River	MERCED R A RIVER ROAD BRIDGE NR N	37.3511	-120.9608	2
Macroinvertebrate	Merced River	MERCED R BL SNELLING DIV DAM NR S	37.5164	-120.3728	2
Macroinvertebrate	Mokelumne River	MOKELUMNE R A WOODBRIDGE CA	38.1586	-121.3025	2
Macroinvertebrate	Orestimba Creek	ORESTIMBA CR AT RIVER RD NR CROWS	37.4136	-121.0150	2
Macroinvertebrate	Sacramento River	SACRAMENTO R A COLUSA CA	39.2142	-121.9992	2
Macroinvertebrate	Sacramento Slough	SACRAMENTO SLOUGH NR KNIGHTS LAND	38.7850	-121.6533	2
Macroinvertebrate	Salt Slough	SALT SLOUGH A HWY 165 NR STEVINSO	37.2478	-120.8511	2
Macroinvertebrate	San Joaquin River	SAN JOAQUIN R A FREMONT FORD BRID	37.3100	-120.9300	2
Macroinvertebrate	San Joaquin River	SAN JOAQUIN R A PATTERSON BR NR P	37.4975	-121.0819	2
Macroinvertebrate	San Joaquin River	SAN JOAQUIN R AT MAZE RD BRIDGE N	37.6400	-121.2283	2
Macroinvertebrate	San Joaquin River	SAN JOAQUIN R NR VERNALIS CA	37.6761	-121.2642	2
Macroinvertebrate	Stanislaus River	STANISLAUS R A CASWELL STATE PARK	37.7025	-121.1772	2
Macroinvertebrate	Stanislaus River	STANISLAUS R A MILE 50 NR KNIGHTS	37.8042	-120.7228	2
Macroinvertebrate	Stanislaus River	STANISLAUS R A RIPON CA	37.7297	-121.1094	2
Macroinvertebrate	Stanislaus River	STANISLAUS R A RIVERBANK CA	37.7386	-120.9519	2

Table 2 – Site-Specific Data Point Locations Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Data Type	Water body	Site Name	Latitude	Longitude	Study
Macroinvertebrate	Tuolumne River	TUOLUMNE R A HICKMAN NR WATERFORD	37.6356	-120.7539	2
Macroinvertebrate	Tuolumne River	TUOLUMNE R A MODESTO CA	37.6272	-120.9864	2
Macroinvertebrate	Tuolumne River	TUOLUMNE R A SHILOH RD BRIDGE NR	37.6033	-121.1303	2
Macroinvertebrate	Tuolumne River	TUOLUMNE R A TURLOCK LK STATE PK	37.6311	-120.5772	2
Macroinvertebrate	Yuba River	YUBA R NR MARYSVILLE CA	39.1758	-121.5239	2
Macroinvertebrate	Salt Slough	Salt Slough at Highway 165 near Stevinson	37.2478	-120.8511	3
Macroinvertebrate	Merced River	Merced River at River Road near Newman	37.3511	-120.9608	3
Macroinvertebrate	Orestimba Creek	Orestimba Creek at River Road near Crows Landing	37.4136	-121.0150	3
Macroinvertebrate	Tuolumne River	Tuolumne River at Shiloh Road Bridge near Grayson	37.6034	-121.1303	3
Macroinvertebrate	San Joaquin River	San Joaquin River near Vernalis	37.6761	-121.2653	3
Macroinvertebrate	Cow Creek	Upper North Cow Creek by Phillips Road bridge near Buzzard Roost	40.7490	-121.9418	4
Macroinvertebrate	Cow Creek	Middle North Cow Creek on Highway 299 in Ingot	40.7439	-122.0639	4
Macroinvertebrate	Cow Creek	Lower North Cow Creek near Swede Creek Road/Old 44	40.5637	-122.2251	4
Macroinvertebrate	Cow Creek	Upper Oak Run by Phillips Road bridge near Oak Run to Fern Road	40.7139	-121.9435	4
Macroinvertebrate	Cow Creek	Middle Oak Run by Oak Run Road two miles south of Oak Run to Fern Road	40.6564	-122.0725	4
Macroinvertebrate	Cow Creek	Lower Oak Run at bridge at Old 44 Drive near Winding Way	40.5668	-122.1895	4
Macroinvertebrate	Cow Creek	Upper Clover near Oak Run to Fern road, 1/2 mile north of Clover Creek	40.7025	-121.9174	4
Macroinvertebrate	Cow Creek	Lower Clover on Old 44. 1/2 mile west of Whitmore Road	40.5535	-122.1818	4
Macroinvertebrate	Cow Creek	Upper Old Cow Creek at bridge on Fern Road	40.6801	-121.8693	4
Macroinvertebrate	Cow Creek	Middle Old Cow Creek Bridge on Whitmore Road	40.6236	-121.9799	4
Macroinvertebrate	Cow Creek	Lower Cow Creek at JS Ranch	40.5607	-122.0966	4

Table 2 – Site-Specific Data Point Locations Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Data Type	Water body	Site Name	Latitude	Longitude	Study
Macroinvertebrate	Cow Creek	Lower Old/South Cow Creek 1/4 mile north of Highway 44 on Old 44 Drive	40.5457	-122.1732	4
Macroinvertebrate	Cow Creek	Upper South Cow Creek Bridge on Ponderosa Way	40.6071	-121.8524	4
Macroinvertebrate	Cow Creek	Middle South Cow Creek at PG&E, South Cow Creek Road	40.5512	-122.0760	4
Macroinvertebrate	Cow Creek	Lower South Cow Creek at Dr. Farrell's, 1/4 mile north of South Cow Creek Road	40.5508	-122.0761	4
Macroinvertebrate	Cow Creek	Mainstem Cow Creek at Highway 44 bridge, 1/3 mile east of Deschutes Road	40.5627	-122.2257	4
Macroinvertebrate	Auburn Ravine	Moore Rd.	38.8700	-121.3566	5
Macroinvertebrate	Auburn Ravine	Hwy 65	38.8885	-121.2850	5
Macroinvertebrate	Auburn Ravine	Fowler Rd.	38.9011	-121.2125	5
Macroinvertebrate	Auburn Ravine	Downstream Auburn WWTF	38.8897	-121.1123	5
Macroinvertebrate	Auburn Ravine	Upstream Auburn WWTF	38.8891	-121.1097	5
Macroinvertebrate	Auburn Ravine	Palm Avenue - Most Upstream	38.9064	-121.0751	5
Macroinvertebrate	Dry Creek	Dry Creek - Cook Riolo Rd.	38.7368	-121.3383	5
Macroinvertebrate	Dry Creek	Dry Creek - Atkinson Rd.	38.7343	-121.3087	5
Macroinvertebrate	Dry Creek	Antelope Creek - Sunset Blvd.	38.7876	-121.2489	5
Macroinvertebrate	Dry Creek	Antelope Creek - Taylor Park	38.8183	-121.2164	5
Macroinvertebrate	Dry Creek	Secret Ravine - Loomis Park	38.8245	-121.1755	5
Macroinvertebrate	Dry Creek	Miners ravine - d/s SMD3 WWTF	38.7968	-121.1358	5
Macroinvertebrate	Dry Creek	Miners ravine - u/s SMD3 WWTF	38.7982	-121.1352	5
Macroinvertebrate	Dry Creek	Linda Creek - Champion Oaks Blvd.	38.7300	-121.2493	5
Macroinvertebrate	Dry Creek	Miners Ravine - Auburn Folsom Blvd.	38.7545	-121.1702	5
Macroinvertebrate	Dry Creek	Dry Creek - d/s Roseville WWTF	38.7343	-121.3246	5
Macroinvertebrate	Dry Creek	Dry Creek - u/s Roseville WWTF	38.7339	-121.3187	5
Macroinvertebrate	Coon Creek	Coon Creek - u/s SMD1 WWTF	38.9663	-121.1096	5
Macroinvertebrate	Coon Creek	Coon Creek - d/s SMD1 WWTF	38.9657	-121.1130	5
Macroinvertebrate	Coon Creek	Rock Creek - u/s SMD1 WWTF	38.9643	-121.1101	5
Macroinvertebrate	Pleasant Grove Creek	Pleasant Grove Creek - Pettigrew Rd.	38.8124	-121.4245	5

Table 2 – Site-Specific Data Point Locations Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Data Type	Water body	Site Name	Latitude	Longitude	Study
Macroinvertebrate	Pleasant Grove Creek	Pleasant Grove Creek - Fiddymont Rd.	38.7959	-121.3555	5
Macroinvertebrate	Pleasant Grove Creek	Pleasant Grove Creek - Industrial Blvd.	38.8055	-121.3087	5
Macroinvertebrate	Pleasant Grove Creek	South Branch PGC - Pleasant Gr. Blvd.	38.7711	-121.3159	5
Macroinvertebrate	Butte Creek	Butte Creek - Aguas Frias Rd.	39.5301	-121.8584	5
Macroinvertebrate	Butte Creek	Butte Creek - Durham/Dayton HWY	39.6471	-121.7870	5
Macroinvertebrate	Butte Creek	Butte Creek - HWY 99	39.6994	-121.7771	5
Macroinvertebrate	Gilsizer Slough	Gilsizer Slough - O'Banion Rd.	39.0260	-121.6592	5
Macroinvertebrate	Jack Slough	Jack Slough - Doc Adams Rd.	39.1623	-121.5959	5
Macroinvertebrate	Jack Slough	Jack Slough - Woodruff Rd.	39.2149	-121.5513	5
Macroinvertebrate	Jack Slough	Jack Slough - Loma Rica Rd.	39.2253	-121.5116	5
Macroinvertebrate	Cosumnes River	Cosumnes River @ Michigan Bar Road	38.5006	-121.0450	6
Macroinvertebrate	Lone Tree Creek	Lone Tree Creek @ Austin Road	37.8556	-121.1847	6
Macroinvertebrate	Mountain House Creek	Mtn. House Creek @ Byron Road	37.7856	-121.5356	6
Macroinvertebrate	Ingram Creek	Ingram Creek @ River Road	37.6003	-121.2242	6
Macroinvertebrate	Del Puerto Creek	Del Puerto Creek @ Vineyard Road	37.5214	-121.1486	6
Macroinvertebrate	Orestimba Creek	Orestimba Creek @ River Road	37.4139	-121.0142	6
Macroinvertebrate	Orestimba Creek	Orestimba Creek @ Bell Road	37.3458	-121.0792	6
Macroinvertebrate	Mud Slough	Mud Slough North: u/s San Luis Drain Inflow	37.2625	-120.9056	6
Macroinvertebrate	Salt Slough	Salt Slough @ Lander Ave. (Hwy. 165)	37.2486	-120.8511	6
Macroinvertebrate	Bear Creek	Bear Creek @ Bert Crane Road	37.2556	-120.6519	6
Macroinvertebrate	Orestimba Creek	Orestimba Creek 1	37.4195	-121.0015	7
Macroinvertebrate	Orestimba Creek	Orestimba Creek 2	37.4201	-121.0048	7
Macroinvertebrate	Orestimba Creek	Orestimba Creek 3	37.4131	-121.0154	7
Macroinvertebrate	Orestimba Creek	Orestimba Creek 4	37.4053	-121.0234	7

Table 2 – Site-Specific Data Point Locations Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Data Type	Water body	Site Name	Latitude	Longitude	Study
Macroinvertebrate	Orestimba Creek	Orestimba Creek 5	37.3984	-121.0329	7
Macroinvertebrate	Orestimba Creek	Orestimba Creek 6	37.3892	-121.0418	7
Macroinvertebrate	Orestimba Creek	Orestimba Creek 7	37.3831	-121.0490	7
Macroinvertebrate	Orestimba Creek	Orestimba Creek 8	37.3770	-121.0576	7
Macroinvertebrate	Orestimba Creek	Orestimba Creek 9	37.3648	-121.0615	7
Macroinvertebrate	Orestimba Creek	Orestimba Creek 10	37.3189	-121.1206	7
Macroinvertebrate	Bear Creek	Bear Creek at Bert Crane Rd.	37.2556	-120.6519	8
Macroinvertebrate	Salt Slough	Salt Slough at Lander/Hwy 165	37.2486	-120.8511	8
Macroinvertebrate	Mud Slough	Mud Slough upstream of SLD	37.2550	-120.8742	8
Macroinvertebrate	Mud Slough	Mud Slough downstream of SLD	37.2625	-120.9056	8
Macroinvertebrate	Merced River	Merced River at Hatfield Park (River Road)	37.3497	-120.9578	8
Macroinvertebrate	Los Banos Creek	Los Banos Creek at Hwy 140	37.2764	-120.9539	8
Macroinvertebrate	Ingalsbe Slough	Ingalsbe Slough at J17 Turlock	37.4918	-120.5578	8
Macroinvertebrate	Merced River	Merced River at J16 Oakdale Road	37.4540	-120.6092	8
Macroinvertebrate	Merced River	Merced River at Hwy 59	37.4702	-120.5005	8
Macroinvertebrate	Cosumnes River	Cosumnes River at Michigan Bar Road	38.5006	-121.0450	8
Macroinvertebrate	Cosumnes River	Cosumnes River at Hwy 16	38.4904	-121.0978	8
Macroinvertebrate	Lone Tree Creek	Lone Tree Creek at Austin Road	37.8556	-121.1847	8
Macroinvertebrate	French Camp Slough	French Camp Slough at Airport Road	37.8817	-121.2492	8
Macroinvertebrate	Bear Creek	Bear Creek at Lower Sacramento Road	38.0431	-121.3486	8
Macroinvertebrate	Mountain House Creek	Mountain House Creek at Byron Road	37.7856	-121.5356	8
Macroinvertebrate	Mokelumne River	Mokelumne River at Van Assen Co. Park	38.2225	-121.0344	8
Macroinvertebrate	Calaveras River	Calaveras River at Shelton Road	38.0727	-120.9310	8

Table 2 – Site-Specific Data Point Locations Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Data Type	Water body	Site Name	Latitude	Longitude	Study
Macroinvertebrate	Orestimba Creek	Orestimba Creek at River Road	37.4139	-121.0142	8
Macroinvertebrate	Ingram Creek	Ingram Creek at River Road	37.6003	-121.2242	8
Macroinvertebrate	Del Puerto Creek	Del Puerto Creek at Vineyard	37.5214	-121.1486	8
Macroinvertebrate	Orestimba Creek	Orestimba Creek at Bell Road	37.3458	-121.0792	8
Macroinvertebrate	Big Chico Creek	Big Chico Creek upstream of Highway 32 crossing (BCC-H32)	40.0639	-121.6026	9
Macroinvertebrate	Big Chico Creek	Big Chico Creek near Forest Ranch (BCC-FR)	39.8877	-121.6952	9
Macroinvertebrate	Big Chico Creek	Big Chico Creek within Upper Bidwell Park (BCC-BP)	39.7724	-121.7732	9
Macroinvertebrate	Big Chico Creek	Big Chico Creek downstream of Rose Avenue (BCC-RA)	39.7271	-121.8609	9
Macroinvertebrate	Butte Creek	Butte Creek upstream of Cherry Hill Campground (BC-CHC)	40.1006	-121.4955	9
Macroinvertebrate	Butte Creek	Butte Creek upstream of Doe Mill Road (BC-DMR)	39.7834	-121.6023	9
Macroinvertebrate	Butte Creek	Butte Creek near Richbar Road crossing (BC-RR)	39.7676	-121.6717	9
Macroinvertebrate	Butte Creek	Butte Creek downstream of Honey Run Covered Bridge (BC-HR)	39.7222	-121.7100	9
Macroinvertebrate	Butte Creek	Little Butte Creek upstream of Skyway Road crossing (LBC-S)	39.8857	-121.5953	9
Macroinvertebrate	Butte Creek	Little Butte Creek near Haut Coulteanc Road (LBC-HCR)	39.8800	-121.5972	9
Macroinvertebrate	Yuba River	Yuba River upstream of Marysville at Smartsville Road (YR-M)	39.1759	-121.5228	9
Macroinvertebrate	Feather River	Feather River upstream of the Sacramento River confluence (FR-EN)	38.9004	-121.5823	9
Macroinvertebrate	Sacramento River	Sacramento River upstream of Highway 32 (SR-HAM)	39.7612	-122.0134	9
Macroinvertebrate	Sacramento River	Sacramento River downstream of Sacramento State Park near Colusa (SR-SSP)	38.8126	-121.7720	9
Macroinvertebrate	Arcade Creek	Arcade Creek at Del Paso Park (AC-DPP)	38.6420	-121.3806	9
Macroinvertebrate	American River	American River near Harrington Bar (AR-HB)	38.5681	-121.4212	9

Table 2 – Site-Specific Data Point Locations Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Data Type	Water body	Site Name	Latitude	Longitude	Study
Macroinvertebrate	Alder Creek	ALDER CREEK @ FOLSOM BLVD	38.6375	-121.1983	10
Macroinvertebrate	Auburn Ravine	AUBURN RAVINE @ HWY 193	38.8911	-121.2828	10
Macroinvertebrate	Baker Slough	BAKER SLOUGH @ MCDERMOTT	39.4231	-122.2475	10
Macroinvertebrate	Bear River	BEAR RIVER @ PLEASANT GROVE RD	38.9847	-121.4867	10
Macroinvertebrate	Big Chico Creek	BIG CHICO @ Bidwell Park	39.7439	-121.8164	10
Macroinvertebrate	Butte Creek	BUTTE CR @ Hwy 99	39.6964	-121.7764	10
Macroinvertebrate	Cache Creek	CACHE CR @ PRESERVE	38.6867	-121.8761	10
Macroinvertebrate	Clear Creek	CLEAR CREEK @ NELSON RD	39.5817	-121.6992	10
Macroinvertebrate	Comanche Creek	COMANCHE CK @ USFS LAB	39.7072	-121.7853	10
Macroinvertebrate	Deer Creek	DEER CREEK @ HWY 99	39.9492	-122.0464	10
Macroinvertebrate	Dry Creek	DRY CK @ GIBSON PARK RANCH	38.7297	-121.3969	10
Macroinvertebrate	Dry Creek	DRY CK D/S HWY 191	39.6197	-121.6364	10
Macroinvertebrate	Dry Creek	DRY CREEK @ BEALE AFB	39.0894	-121.3556	10
Macroinvertebrate	Dye Creek	DYE CREEK @ SHASTA BLVD	40.0883	-122.0903	10
Macroinvertebrate	Gold Run Creek	GOLD RUN CK @ OPENSHAW RD	39.5933	-121.6394	10
Macroinvertebrate	Jack Slough	JACK SLOUGH @ LOMA RICA RD.	39.2250	-121.5103	10
Macroinvertebrate	Mill Creek	MILL CREEK @ HWY 99	40.0439	-122.0986	10
Macroinvertebrate	Miners Ravine	MINERS RAVINE	38.7592	-121.2561	10
Macroinvertebrate	New Creek	NEW CREEK @ HWY 99	40.1631	-122.1542	10
Macroinvertebrate	Putah Creek	PUTAH CK @ UC DAVIS	38.5272	-121.8017	10
Macroinvertebrate	Salt Creek	SALT CREEK @ HWY 20	39.1508	-122.1811	10
Macroinvertebrate	Secret Ravine	SECRET RAVINE	38.7594	-121.2567	10
Macroinvertebrate	Honcut Creek South	SOUTH HONCUT @ SOUTH HONCUT RD.	39.3031	-121.5650	10
Macroinvertebrate	Spring Creek	SPRING CR @ HWY 20	39.1472	-122.1792	10
Macroinvertebrate	Stone Corral Creek	STONE CORRAL CR	39.2879	-122.2289	10
Macroinvertebrate	Toomes Creek	TOOMES CREEK @ TEHEMA VINA ROAD	39.9797	-122.0681	10
Macroinvertebrate	Ulati Creek	ULATIS CK @ FERRELL RD	38.3694	-121.9947	10

Table 2 – Site-Specific Data Point Locations Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Data Type	Water body	Site Name	Latitude	Longitude	Study
Macroinvertebrate	Union School Slough	UNION SCHOOL SLOUGH @ RD 88	38.6069	-121.9919	10
Macroinvertebrate	Willow Slough	WILLOW SLOUGH @ RD 27	38.6197	-121.8325	10
Fish	Merced River	Merced River at River Road	37.3511	-120.9608	11
Fish	Merced River	Merced River at Hagamann County Park	37.3683	-120.8464	11
Fish	Merced River	Merced River at McConnell State Park	37.4139	-120.7092	11
Fish	Merced River	Merced River near Snelling Diversion Dam	37.5164	-120.3728	11
Fish	Mud Slough	Mud Slough near Gustine	37.2625	-120.9056	11
Fish	Orestimba Creek	Orestimba Creek at River Road	37.4136	-121.0150	11
Fish	Salt Slough	Salt Slough at Lander Avenue	37.2478	-120.8511	11
Fish	San Joaquin River	San Joaquin River near Vernalis	37.6761	-121.2653	11
Fish	San Joaquin River	San Joaquin River at Maze Road	37.6400	-121.2283	11
Fish	San Joaquin River	San Joaquin River near Patterson	37.4975	-121.0819	11
Fish	San Joaquin River	San Joaquin River at Fremont Ford	37.3100	-120.9300	11
Fish	Stanislaus River	Stanislaus River at Caswell State Park	37.7025	-121.1772	11
Fish	Stanislaus River	Stanislaus River near Ripon	37.7297	-121.1094	11
Fish	Stanislaus River	Stanislaus River near Riverbank	37.7386	-120.9519	11
Fish	Stanislaus River	Stanislaus River near Knights Ferry	37.8042	-120.7228	11
Fish	Tuolumne River	Tuolumne River at Shiloh Road	37.6033	-121.1303	11
Fish	Tuolumne River	Tuolumne River at Modesto	37.6269	-120.9869	11
Fish	Tuolumne River	Tuolumne River near Waterford	37.6356	-120.7539	11
Fish	Tuolumne River	Tuolumne River at Turlock State Recreation Area	37.6311	-120.5772	11
Fish	American River	American River at Sacramento	38.5681	-121.4222	12
Fish	Big Chico Creek	Big Chico at Soda Springs Campground	40.0878	-121.5844	12

Table 2 – Site-Specific Data Point Locations Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Data Type	Water body	Site Name	Latitude	Longitude	Study
Fish	Big Chico Creek	Big Chico Creek above Chico	39.7669	-121.7783	12
Fish	Big Chico Creek	Big Chico Creek at Chico	39.7272	-121.8622	12
Fish	Big Chico Creek	Big Chico Creek near Forest Ranch	39.8933	-121.6922	12
Fish	Butte Creek	Butte Creek at Cherry Hill Campground	40.1025	-121.4964	12
Fish	Butte Creek	Butte Creek near Afton	39.4200	-121.8800	12
Fish	Butte Creek	Butte Creek near Butte Meadows	40.0683	-121.5736	12
Fish	Butte Creek	Butte Creek near Meridian	39.2406	-121.9472	12
Fish	Butte Creek	Butte Creek near Nelson	39.5842	-121.7989	12
Fish	Butte Creek	Butte Creek near Paradise	39.7289	-121.7025	12
Fish	Cache Creek	Cache Creek near Guinda	38.8283	-122.1822	12
Fish	Colusa Basin Drain	Colusa Basin Drain near Knights Landing	38.8125	-121.7731	12
Fish	Deer Creek	Deer Creek at Potato Patch Campground	40.1878	-121.5311	12
Fish	Deer Creek	Deer Creek below Hwy 99 Bridge	39.9408	-122.0636	12
Fish	Deer Creek	Deer Creek near Ishi Wilderness Area	40.0706	-121.7036	12
Fish	Deer Creek	Deer Creek near Vina	40.0141	-121.9472	12
Fish	Feather River	Feather River near Nicholas	38.8906	-121.6033	12
Fish	Sacramento River	Sacramento River near Colusa	39.2142	-121.9992	12
Fish	Sacramento Slough	Sacramento Slough near Karnak	38.7792	-121.6375	12
Fish	Yuba River	Yuba River near Marysville	39.1758	-121.5239	12

Table 3 – Sacramento-San Joaquin Delta Total Maximum Daily Load Water Bodies (McClure *et al.*, 2006)

Water Body Names
Alamo Creek
Babel Slough
Barker Slough
Bear Creek
Bear Slough
Beaver Slough
Big Break
Bishop Cut
Black Slough
Broad Slough
Brushy Creek
Burns Cutoff
Cabin Slough
Cache Slough
Calaveras River
Calhoun Cut
Clifton Court Forebay
Columbia Cut
Connection Slough
Cosumnes River
Crocker Cut
Dead Dog Slough
Dead Horse Cut
Deer Creek (Trib to Marsh Creek)
Delta Cross Channel
Deuel Drain
Disappointment Slough
Discovery Bay
Donlon Island
Doughty Cut
Dredger Cut
Dry Creek (Marsh Creek tributary)
Dry Creek (Mokelumne River tributary)
Duck Slough
Dutch Slough
Elk Slough
Elkhorn Slough
Emerson Slough

Water Body Names
Empire Cut
Fabian and Bell Canal
False River
Fisherman's Cut
Fivemile creek
Fivemile Slough
Fourteenmile Slough
Franks Tract
French Camp Slough
Georgiana Slough
Grant Line Canal
Grizzly Slough
Haas Slough
Hastings Cut
Highline Canal
Hog Slough
Holland Cut
Honker Cut
Horseshoe Bend
Indian Slough
Italian Slough
Jackson Slough
Kellogg Creek
Latham Slough
Liberty Cut
Lindsey Slough
Little Connection Slough
Little Franks Tract
Little Mandeville Cut
Little Potato Slough
Little Venice Island
Livermore Yacht Club
Lookout Slough
Lost Slough
Main Canal (tributary to Duck Slough)
Main Canal (tributary to Italian Slough)
Marsh Creek
Mayberry Cut

Water Body Names
Mayberry Slough
Middle River ³
Mildred Island
Miner Slough
Mokelumne River ⁴
Mormon Slough
Morrison Creek
Mosher Slough
Mountain House Creek
North Canal
North Fork Mokelumne River
North Victoria Canal
Old River ⁵
Paradise Cut
Piper Slough
Pixley Slough
Potato Slough
Prospect Slough
Red Bridge Slough
Rhode Island
Rock Slough
Sacramento Deep Water Channel
Sacramento River ⁶
Salmon Slough

³ Old River to Victoria Canal to San Joaquin River (near Mandeville Island)

⁴ Delta Boundary to N and S fork Split to San Joaquin River

⁵ San Joaquin River (near Stewart Tract) to Clifton Court Forebay to San Joaquin River (near Mandeville Island)

⁶ "I" street bridge to River Mile 44 to Cache Slough to San Francisco Bay Region Boundary

Table 3 – Sacramento-San Joaquin Delta Total Maximum Daily Load Water Bodies (McClure *et al.*, 2006) (continued)

Water Body Names
San Joaquin River ⁷
Sand Creek
Sand Mound Slough
Santa Fe Cut
Sevenmile Slough
Shag Slough
Sheep Slough
Sherman Lake
Short Slough
Smith Canal
Snodgrass Slough
South Fork Mokelumne River
Steamboat Slough
Stockton Deep Water Channel
Stone Lakes
Sugar Cut
Sutter Slough
Sweany Creek
Sycamore Slough
Taylor Slough (Elkhorn Slough tributary)
Taylor Slough (near Franks Tract)
Telephone Cut
The Big Ditch
The Meadows Slough
Three River Reach
Threemile Slough
Toe Drain
Tom Paine Slough
Tomato Slough
Trapper Slough
Turner Cut
Ulati Creek
Upland Canal (tributary to Sycamore Slough)
Victoria Canal

Water Body Names
Walker Slough
Walthall Slough
Washington Cut
Werner Dredger Cut
West Canal
Whiskey Slough
White Slough
Winchester Lake
Woodward Canal
Wright Cut
Yolo Bypass
Yosemite Lake

⁷ Verona to Port of Stockton to San Francisco Bay Region Boundary

Table 4 – Summary of Site-Specific Studies Containing Aquatic Life Data Within the Central Valley Pesticide Basin Plan Amendment Project Area

Study #	Study Citation	Year(s) Studied	Organisms Sampled	# sites	Physical Habitat Assessment	Other Parameters Measured
1	Bacey, J., F. Spurlock. 2005. Biological assessment of urban and agricultural streams in the California Central Valley (Fall 2002 through Spring 2004). California Department of Pesticide Regulation. http://www.cdpr.ca.gov/docs/empm/pubs/ehapreps/eh0501.pdf	2002-2003	macroinvertebrates	8	yes	Temperature, dissolved oxygen, specific conductance, pH, turbidity, pyrethroids, organophosphorus pesticides, herbicides, pyrethroid analysis of sediment
2	Brown, L.R. and J.T. May. 2000. Benthic macroinvertebrates assemblages and their relations with environmental variables in the Sacramento and San Joaquin River drainages, California, 1993-1997. US. Geological Survey Water-Resources Investigations Report 00-4125. 25 p.	1993-1997	macroinvertebrates	~53*	yes	Temperature, dissolved oxygen, specific conductance, pH, alkalinity
3	Brown, L.R., and May, J.T., 2004. Periphyton and macroinvertebrate communities at five sites in the San Joaquin River Basin, California, during June and September, 2001: U.S. Geological Survey Scientific Investigations Report 2004-5098, 43 p.	2001	macroinvertebrates & periphyton	5	yes	Temperature, specific conductance
4	CVRWQCB. 2003. Cow Creek water quality study, 2001-2003. Central Valley Regional Water Quality Control Board. Redding. 33 p.	2001-2003	macroinvertebrates	16	yes	Temperature, dissolved oxygen, specific conductance, pH, turbidity, fecal coliform bacteria, <i>E. coli</i> bacteria

Table 4 – Summary of Site-Specific Studies Containing Aquatic Life Data Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Study #	Study Citation	Year(s) Studied	Organisms Sampled	# sites	Physical Habitat Assessment	Other Parameters Measured
5	de Vlaming, V., D. Markiewicz, K. Goding, T. Kimball, and R. Holmes. 2004. Macroinvertebrate Assemblages in Agriculture- and Effluent-Dominated Water bodies of the Lower Sacramento River Watershed. University of California, Davis. http://www.waterboards.ca.gov/centralvalley/available_documents/waterqualitystudies/Sac_River_BioReport_Final.pdf	2000-2002	macroinvertebrates	44	yes	Temperature, dissolved oxygen, specific conductance, pH, turbidity, alkalinity, hardness, nutrients, color
6	de Vlaming, V. D. Markiewicz, K. Goding, A. Morrill, J. Rowan. 2005. Macroinvertebrate Assemblages of the San Joaquin River Watershed. University of California, Davis. http://www.waterboards.ca.gov/centralvalley/available_documents/waterqualitystudies/SJR_Bioassessment_Final_Rpt.pdf	2001	macroinvertebrates	11	yes	Temperature, dissolved oxygen, specific conductance, pH, turbidity, alkalinity, hardness, metals, nutrients, total organic carbon, biological oxygen demand
7	Hall, Jr., L.W, and W.D. Killen. 2005. Temporal and spatial assessment of water quality, physical habitat, and benthic communities in an impaired agricultural stream in California's San Joaquin Valley. Journal of Environmental Science and Health, Part A. 40:959-989.	2000-2002	macroinvertebrates	10	yes	Temperature, dissolved oxygen, specific conductance, pH, turbidity, salinity

Table 4 – Summary of Site-Specific Studies Containing Aquatic Life Data Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Study #	Study Citation	Year(s) Studied	Organisms Sampled	# sites	Physical Habitat Assessment	Other Parameters Measured
8	Markiewicz, D., K. Goding, V. de Vlaming, J. Rowan. 2005. Benthic macroinvertebrate bioassessment of San Joaquin River tributaries: spring and fall 2002. University of Davis. http://www.waterboards.ca.gov/centralvalley/available_documents/waterquality_studies/SJR02_Bioassess_final_083005.pdf	2002	macroinvertebrates	22	yes	Temperature, dissolved oxygen, specific conductance, pH, alkalinity, hardness, metals, nutrients, total organic carbon, biochemical oxygen demand
9	Ode, P.R., A. Montalvo, D. Post, A. Rehn, M. Dawson. 2000. A water quality inventory series, biological and physical habitat assessment of California Water Bodies. Sacramento River Watershed Project: 2000 biological assessment report. California Department of Fish and Game. 40 p.	2000	macroinvertebrates	37	yes	Temperature, dissolved oxygen, specific conductance, pH
10	Ode, P.R., D.P. Pickard, J.P. Slusark, and A.C. Rehn. 2005. Adaptation of a bioassessment reference site selection methodology to creeks and sloughs of California's Sacramento Valley and alternative strategies for applying bioassessment in the valley. Report to the Central Valley Regional Water Quality Control Board. California Department of Fish and Game Aquatic Bioassessment Laboratory, Rancho Cordova, California.	2004	macroinvertebrates	30	yes	Temperature, dissolved oxygen, specific conductance, alkalinity, salinity
11	Brown, L.R., 2000. Fish communities and their associations with	1993-1995	fish	20	yes	Temperature, dissolved oxygen, specific

Table 4 – Summary of Site-Specific Studies Containing Aquatic Life Data Within the Central Valley Pesticide Basin Plan Amendment Project Area (continued)

Study #	Study Citation	Year(s) Studied	Organisms Sampled	# sites	Physical Habitat Assessment	Other Parameters Measured
	environmental variable, lower San Joaquin River drainage, California. Environmental Biology of Fishes 57: 251-269.					conductance, pH, alkalinity, nutrients
12	May, J.T., and L.R. Brown. 2002. Fish communities of the Sacramento River Basin: implication for conservation of native fishes in the Central Valley, California. Environmental Biology of Fishes. 63: 373-388.	1996-1998	fish	22	yes	Temperature, dissolved oxygen, specific conductance, pH, alkalinity, nutrients, major ions
* total sites that the study sampled. The number of sites we used was sometimes fewer.						



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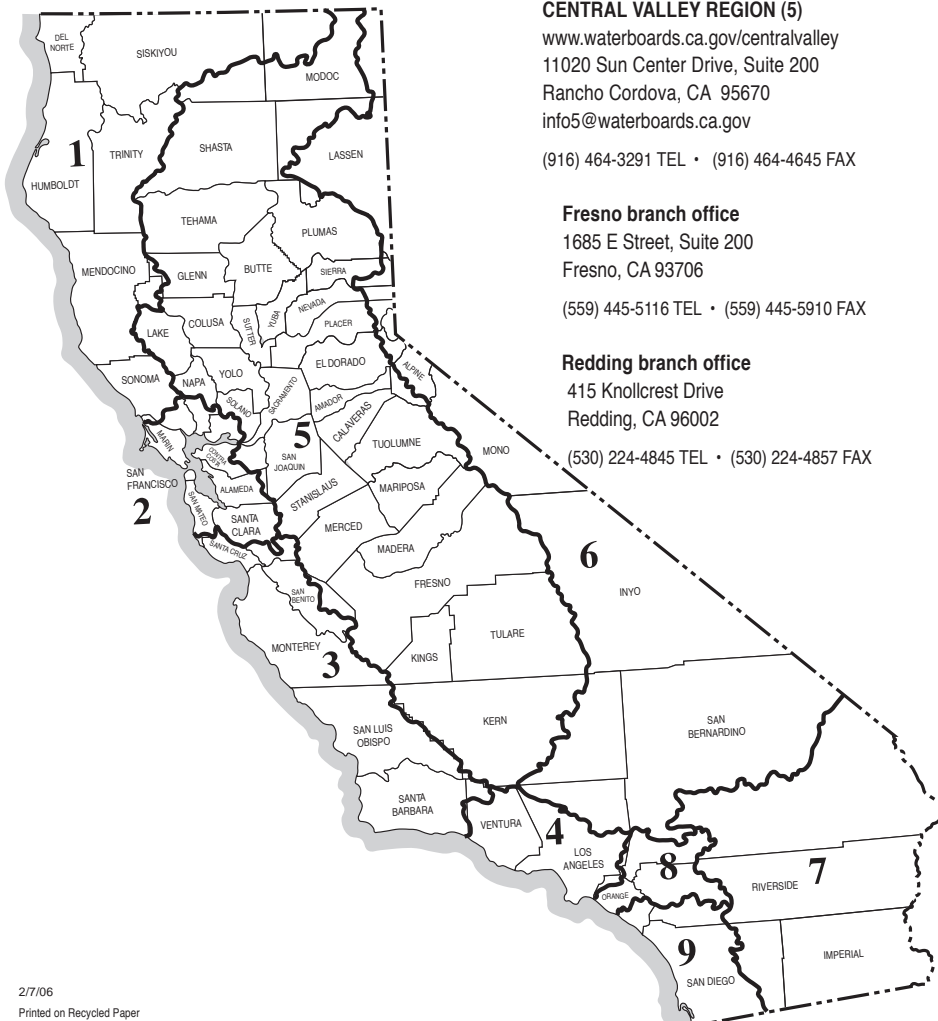
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